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TAX REVIEW

A SUPPLEMENT TO THE CANADIAN CHARTERED ACCOUNTANT JUNE 1949

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THE TAX REVIEW

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THE TAX REVIEW

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[1949] June Pages 83-96

PAYMENTS FOR PATENT RIGHTS AND TRADE SECRETS: INCOME OR CAPITAL?

By Melville Pierce, B.A., LL.B.

A PATENT OF INVENTION IS A SPECIES of property, being the exclusive right to the possession and use of the invention protected by the letters patent. Patents and patent rights may be exploited in various ways, and the ingenuity of the taxpayer in devising methods of exploitation frequently gives rise to income tax problems.

Under the *Income Tax Act*, the profit from a business or property is chargeable income: ITA sec. 4, and as a patent is a species of property which frequently enters into business transactions, a payment in respect of patent rights may, depending on the circumstances, enter into the computation of profit from property, or of profit from business, but, on the other hand may be a capital sum and free of tax liability altogether.

The Act contains one specific provision which applies to payments in respect of patent rights.* Section 6(j) provides that the following shall be included in the computation of income:

> Amounts received by the taxpayer in the year that were dependent upon use of or production from property, whether or not they were instalments of the sale price of the property . . . .

So far as payments in respect of patent rights are concerned this specific enactment renders chargeable amounts received in respect of the user of patents calculated by reference to the quantum of user even though they be instalments of the sale price of the patent. As will appear from the cases hereinafter cited, this statutory enactment goes, or appears to go, no farther than the British decisions have already gone without any like enactment. There are, however, cases in which the amount received for patent rights is not dependent on the user of the patent, and the question in all such cases is whether the sum received is profit from a property or business or, instead, a capital sum. On this question, in the absence of Canadian decisions, the British cases are of assistance.

No real difficulty is presented where it is simply a question of the outright sale of a patent. The answer in all such cases depends upon whether or not the sale takes place in the course or outside the course of the patentee's trade. Thus in *Collins* v. *Firth-Brearly Stainless Steel Syndicate Ltd.* (1926) 9 T.C. 520, where the company was formed to exploit certain patents relating to the manufacture of stainless steel and held patent rights in numerous countries of which it

*Under Part II of the Act, non-residents are subject to a 15% withholding tax on amounts paid or credited to them or deemed to be paid or credited to them by way of "rent, royalty or a similar payment for the use in Canada of property, in respect of an invention used in Canada or for any property . . . trade name, design or other thing whatsoever used or sold in Canada" (sec. 96(1)(e)) or, under sec. 96(1)(f), inter alia, for "the right to use a patented or unpatented invention, process or formula" subject to the deductions mentioned therein. The present discussion does not touch on these provisions.

granted licences for manufacture in return for royalties, it was held that sums received as consideration for the outright sale of patent rights in two countries were not receipts of the company's trade but capital sums. Yet in one of the sales the consideration included, in addition to a lump sum, an annual payment of £1000 for the life of the patents.

In *Rees Roturbo Development Syndicate Ltd.* v. *Ducker* (1928) 13 T.C. 366 on the other hand, where the company was formed to acquire patents, grant licences and turn them to account, which it normally did by granting licences to use the patents in foreign countries in return for royalties, it was held that a sum received by the company upon the exercise of an option to purchase the patent rights in a foreign country was a trading receipt and not capital, on the ground that while the company did not normally sell or wish to sell patent rights the sale of such rights under certain circumstances was contemplated as part of its business.

Cases of outright sale thus furnish no considerable difficulty, once it is established that the vendor's business either does or does not include the sale of patents within its compass. The real difficulty in characterising a receipt as on income or capital account arises in cases where the patent rights are not sold absolutely but some right less than the whole property therein is granted for a consideration.

In two decisions by the House of Lords, *Constantinesco* v. *Rex* (1927) 11 T.C. 730 and *Mills* v. *Jones* (1929) 14 T.C. 769, it was held that a lump sum payment in respect of the past user of a patent by the Crown (under compulsory powers) was an income and not a capital receipt. In the former case the invention had been used to manufacture some 27,857 gears during a certain period; in the latter case the invention had been used in the manufacture of some 75,000,000 bombs in a certain period. In both cases the property in the patent remained in the patentee. Both cases would appear to be within the language of ITA sec. 6(j), *supra.*

In the *Mills* case a further point arose. In that case the lump sum payment made was expressed by the Royal Commission which awarded it to be in respect of "past, present *and future* user", and it was urged that because of the inclusion of an amount for unspecified future user the sum paid was to that extent capital and not income. This contention was not dealt with in the House of Lords, which agreed with the tribunal of fact that in view of the large number of bombs on hand at the Armistice the sum awarded for future user was negligible. In the Court of Appeal, however, the Court rejected the contention on the merits on the ground that the sum was paid for user, whether past or future, and was therefore income. See, however, the *Desoutter, Salmson* and *Rustproof* cases, *infra,* which decide that the real question in all these cases is not whether the sum is paid for *user* of a patent but whether it is of an income as distinct from a capital character.

The above cases are concerned with a lump sum payment measured by actual user. That annual royalties calculated by the quantum of user of a patent are also of a revenue character though given in consideration of the sale price was decided by Rowlatt J. in *Jones* v. *C.I.R.* (1919) 7 T.C. 310. In this case the consideration for the sale of exclusive rights to a patent for a period of 10 years was a lump sum plus a royalty of 10% on all sales of machines constructed under the patents during the 10 years. Rowlatt J. held that an annual sum dependent on the volume of business done had the quality of income though given in consideration of a sale. This case too falls within the language of ITA sec. 6(j), *supra.*

The only Canadian income tax case concerning payments for patent rights is *Pope Appliances Corp.* v. *Minister of Customs & Excise* [1926] C.T.C. 315. Here the appellant company granted licences of the right to use its patents in

the manufacture and operation of certain paper-making machines but not for the sale of such machines. The consideration for the licence was a royalty calculated on the basis of the amount of paper produced per machine. It was held by Maclean J. that the royalty payments for user of the inventions measured by the quantity of production of each machine had none of the characteristics of capital but were clearly income under the IWTA. *Jones* v. *C.I.R.* and *Constantinesco* v. *R., supra,* were cited.

Now consider two decisions in which a lump sum not calculated by reference to the quantum of user was paid for patent rights and in each case held to be a capital sum.

In *Desoutter Bros. Ltd.* v. *Hanger & Co.* [1936] 1 A.E.R. 535, a non-exclusive licence to use a patent of invention for 5 years was granted to a licensee for the sum of £3000. Following a *dictum* of Rowlatt J. in the *Constantinesco* case (*supra*), McKinnon J. held that a lump sum payment made in advance of the anticipated user and without reference to the quantum of user was a capital sum. This case was cited with approval by the Court of Appeal and by Viscount Simon in the House of Lords in *Nethersole* v. *Withers* (1946) 28 T.C. 501. That this decision cannot be relied on as stating an invariable rule of law, however, is made clear by the decision of the Court of Appeal in the *Rustproof* case, *infra,* where the opposite conclusion was reached on similar facts. The Court there said that in every case the question for determination is this: is the payment on the facts of the case *income* or *capital*. The decision in the *Desoutter* case is, as are decisions in all these cases, merely a guide post and not an inflexible rule of law.*

In *Margerison* v. *Tyresoles Ltd.* (1942) 25 T.C. 59, pursuant to an agreement containing a number of terms regulating a business arrangement, the company installed and operated a patented tyre retreading plant and process in premises supplied and maintained by various garage proprietors in various parts of Britain in consideration of a lump sum paid to the company and a special discount from list prices granted by the company to the garage proprietors. In each case the company undertook not to make similar arrangements with other firms in the area. It was held that the lump sum so paid to the company was a capital receipt for the grant of an exclusive right within a specified area which *pro tanto* disentitled the company to the exercise of its rights therein. (See the *Salmson* case, *infra,* which Wrottesley J. applied.) The Commissioners held, and Wrottesley J. agreed, that the sum was not a trading receipt, on the ground (apparently) that the company's trade was the retreading of tyres, not the dealing in restrictive covenants. It is not impossible, however, that the converse finding by the Commissioners on the question of trade, which would of course have produced the opposite result, would also have been accepted by the Court. See e.g. *British Dyestuffs Corp.* v. *C.I.R., infra,* for a decision in which the *contra* finding on this question produced the opposite result.

There have been two recent decisions of importance by the Court of Appeal.

In the first of these, *British Salmson Aero Engines Ltd.* v. *C.I.R.* (1938) 22 T.C. 29, a French company granted a British company the exclusive right for 10 years within the British Commonwealth to construct and sell aeroplane engines constructed according to the French company's patented designs, the

*The Desoutter case was concerned with the right of the licensee to deduct income tax under the relevant British rule before making the payment, and not with the nature of the receipt in the hands of the licensor. The character of a sum in the hands of a payer will not change because its character in the hands of the payee, whether as a trading receipt or a capital sum, will depend on the nature and course of the payee's trade or business.

French company excluding itself from the territory and covenanting to join the British company in any necessary action to protect the patent therein. The British company undertook to pay the French company £25,000 in three instalments plus an additional royalty of £2500 annually during the life of the agreement. It was held that the lump sum payment of £25,000 was a capital sum and that the annual payments of £2500 were income, the latter only being chargeable to income tax. The Court regarded the lump sum payment as consideration for the grant of exclusive rights within the territory, whereby the French company surrendered its rights itself to exploit its patents therein, and the annual payment as royalty for user of the patents. Note that the annual sum was of a fixed amount and not measurable by the quantum of user, but was none the less held to be income.

The second case, which provides an excellent contrast, is *Rustproof Metal Window Co.* v. *C.I.R.* (1947) 29 T.C. 243. This case was concerned with the grant of a non-exclusive licence of a patented galvanizing process to another company to enable it to fulfil a government contract for the manufacture of not more than 75,000 ammunition boxes. The consideration was stated to be (a) "a capital sum of £3000", and (b) "royalties" of 3d per ammunition box treated. (There was no question as to the royalties being income.) The Court of Appeal held (affirming the decision of the Commissioners but reversing Atkinson J.) that the lump sum payment of £3000 was income received for the user of a patent. In view of the non-exclusive nature of the licence, the fact that it was granted for a specific purpose and limited to a specific number of boxes and to the time required for that purpose, there was, in the Court's view, no capital element in the payment. The Court said that a lump sum paid for the right to use a patent, which is payable whether the patent is used or not, is not necessarily a capital payment as a matter of law, but that the question whether it is capital or income can only be answered upon a consideration of all the circumstances of the case. *Cf.* the *Desoutter* case, *supra.*

That the question whether the payment is income or capital can only be answered upon a consideration of all the circumstances and not by an inflexible rule, particularly where the answer to the question depends upon whether or not the transaction occurred in the course of the recipient's business, is well illustrated by the two following cases. (See also *Margerison* v. *Tyresoles Ltd.*, and the *Rees Roturbo* case, *supra*).

In *Brandwood* v. *Banker* (1928) 14 T.C. 44, Brandwood, who carried on business as a seller of dyeing machinery and who owned certain patented dyeing processes, made agreements with several companies for the sale to them of machines for certain sums and, for additional lump sum payments, granted them the exclusive right to use the machinery and his patented processes within a specified area for a certain time. It was conceded that the sums paid for the machinery were revenue receipts, and Rowlatt J. held that on the proper construction of the transaction the additional rights were merely consequential on the sale of the machinery and also revenue receipts.

A more complicated case is *British Dyestuffs Corp.* v. *C.I.R.*, 12 T.C. 586, which was concerned with a complicated convention between two large chemical corporations, one of the terms of which provided for the payment of an annual sum by one company to the other for the use of certain patents within its territory. The Court of Appeal held that upon the proper construction of the convention between the two companies the sums so paid were not capital sums paid for the purchase of anything but a payment for the profits to be derived by the payer from the working of the convention and were thus profits from the trade or business covered by the convention.

Other cases arise involving the disclosure of secret knowledge or a secret

process for a payment, which though akin to the sale or licensing of patent rights have one significant difference, viz., that a patent is a species of property of which the law grants a monopoly to the patentee, whereas a secret process is a monopoly only because it is secret, and thus whilst a licence to use a patent does not destroy the monopoly, the disclosure of a secret process whether pursuant to a licence to use or otherwise does *ipso facto* involve a diminution in its value.

Handley Page v. *Butterworth* (1935) 19 T.C. 328 concerns such a question. In that case the company was obliged by the Government to make its secret knowledge of aircraft manufacture available to others, including its competitors, and was eventually awarded an *ex gratia* payment for doing so. It was held by the Court of Appeal (reversing the Special Commissioners and Finlay J.) that inasmuch as the company surrendered the whole substratum of its property (namely, its secret knowledge) in making its secret knowledge available to its trade competitors, the award was not a trading receipt but a payment on account of capital. (A further appeal to the Lords was dismissed on other grounds.)

BASIC HERDS

By Clem L. King, B.Com., C.A.

A TAXPAYER ENGAGED IN THE PRODUCTION of livestock or livestock products is in much the same position as the orchard grower in that he must have a tree or source from which his fruit will come. Ordinarily the livestock operator derives his revenue from the natural increase, rather than from trading in animals, except where he makes a profit from feeder operations. Revenue Directive No. 263, under date of March 23, 1949, replacing the prior directives of September 4, 1947 and November 17, 1948, sets out the present viewpoint of the Department of National Revenue on this subject.

The directive provides for the recognition of the operator's basic herd for tax purposes, providing that he makes application in prescribed manner. A basic herd may be recognized for cattle, horses, sheep or swine, produced for sale as livestock or for the sale of livestock products. It is interesting to note that the herd basis introduced in Great Britain in 1947 provides for a basic herd if the livestock is kept for sale or for the sale of livestock products that can be obtained without the slaughter of the animal. The Canadian directive covers animals kept for sale as breeding stock or for meat or, in the case of sheep, for wool. Presumably it does not cover herds maintained for competition or show purposes, since the revenue in such case can hardly be said to derive from the sale of livestock products. The directive also provides that separate herds must be established if both grade and registered animals are raised unless the number of registered animals is 10% or less of the total herd, or *vice versa.* If an operator is raising, say, both cattle and swine, he may secure approval for the establishment of a basic herd for the swine as well as for the cattle.

In all cases the number of animals for the purposes of this directive is to be taken in terms of the equivalent number of mature animals. A mature animal is one which has reached the age of 2 years in the case of cattle, 3 years in the case of horses and 1 year in the case of sheep and swine. Two immature animals are to be regarded as being the equivalent of one mature animal.

The basic herd will consist of the number of animals that the taxpayer can establish were acquired by gift, inheritance or by purchase in any taxation year. If the animals were acquired by purchase, no part of the purchase cost can

have been charged as an expense. In addition, animals acquired in the 1946 or prior taxation years by purchase or natural increase may be included in the basic herd to the extent that their purchase cost or fair market value in the year of their maturity can be added to the income for the year without increasing it to a taxable amount. The taxpayer who reported his income for taxation purposes on an accrual basis and who was carrying on operations on January 1, 1947 is entitled to a basic herd of the number of animals in his inventory as of that date or, if his fiscal year was other than the calendar year, to the number of animals in the inventory of the year including January 1, 1947.

A taxpayer engaged in livestock operations on January 1, 1947 may secure approval of the basic herd as of that date, and those engaging in livestock operations subsequent to that date may have the herd approved as from the commencement of operations. To secure approval, however, the taxpayer must have filed returns for the 3 preceding taxation years or, if he has not engaged in livestock operations for that long, since the commencement of operations. In all cases the application must be made on the form prescribed by the Minister, which will be available in the District Income Tax Offices in the near future.

Special provision is made for the taxpayer who disposed of his basic herd prior to January 1, 1947 and who has not been assessed or whose assessment was made after the date of the original basic herd directive, September 4, 1947. In these cases application must be made before December 31, 1949. Presumably the taxpayer will, in this case, reconstruct the number of animals to be included in the basic herd in accordance with the provisions of the directive, bringing it up to the year of the dispersal sale. The proceeds from the sale of such animals are of course not regarded as income but rather as being in the nature of the realization of a fixed asset.

The number of animals in the basic herd may be increased by animals acquired by gift or inheritance and animals purchased, if the purchase cost is not charged to expense. In addition, the basic herd may be increased by virtue of the natural increase, provided that the fair market value of such additions is added to the income of the year in which the animals reach maturity. Presumably the fair market value is to be calculated as of the date on which the animals reach maturity.

The directive provides that the number of animals in the basic herd cannot exceed the actual number of animals on hand at any time. If the total number of animals is reduced by a sale or by any other cause, which would include death of the animals, so that the actual number of animals on hand is less than the number comprising the basic herd, any proceeds of such disposition are not income for tax purposes but are regarded as a non-taxable realization. Since the basic herd is expressed as a number of animals, the directive provides that the proceeds on disposition shall be calculated on the basis of the average price received for all animals sold during the year in which the basic herd is reduced. Here as elsewhere, the number of animals is expressed in terms of equivalent mature animals, but the sale of a female together with progeny is regarded as the sale of one animal. It should be noted that the directive specifically excludes animals purchased for feeder operations from inclusion in the basic herd.

Ordinarily the basic herd will be composed of animals used for breeding purposes, but there may be circumstances in which it would be advantageous to increase the size of the basic herd in order to secure a tax advantage. An operator raising beef steers might consider that the state of the market will make it worth while to increase his basic herd by animals reaching their second year and taking into income in that year their fair market value, later on, in their third or fourth year, arranging for a dispersal sale the proceeds of which will be a capital realization rather than taxable income.

SIR STAFFORD CRIPPS INSTITUTES INQUIRY INTO BUSINESS PROFITS

IN HIS BUDGET ADDRESS IN THE BRITISH House of Commons on April 6, 1949, the Chancellor of the Exchequer, Sir Stafford Cripps, announced the setting up of a committee to inquire into the method of computing net trade profits for income tax purposes.

On this question he said: "The whole question of calculating profits in a way which can take care of marked changes in price formed part of representations made to me by the Federation of British Industries. The proposal I have just described [an increase to 40% in initial depreciation allowances] will, I hope, go far to meet the immediate needs of industry, but there are a number of other issues, arising out of the present structure of taxation, including the incidence of tax and its effects on risk bearing, which require further examination. We must continue to look to industry, broadly speaking, for the same total contribution to the national revenue as at present, but, within this limitation, it may well be that the present arrangements could be modified to enable the burden to be more easily borne.

"An inquiry covering the whole subject would be a very extensive undertaking indeed, and I propose to make a start by taking the technical issues which arise in connexion with the computation of taxable profits. A number of such issues, of importance to industry, have been raised both with my predecessors and with myself, and I think it would be convenient if, as a first step, these technical matters were examined by a small, independent committee, whose terms of reference, in effect, would be to inquire into the method of computing net trade profits, for the purpose of charging them to income-tax and profits tax, and into the question of the basis period to be taken in assessing the tax on the profits so ascertained.

"I propose to set up such a committee accordingly. It will not be part of this committeee's functions to inquire into the general question of the incidence of tax upon industry, but its work will clear the ground for the comprehensive inquiry which I hope to set on foot at a later stage. The inquiry of the committee which I am now proposing to set up will necessarily take some time, and its results will not be available for consideration in connexion with this year's Finance Bill."

QUESTIONNAIRE

A large number of readers have already completed and returned the questionnaire relating to The Tax Review inserted in the May issue. Readers who have not already done so are urged to complete the form and return it to the Editor of The Tax Review, if possible before the end of June. Future policy in regard to The Tax Review will be governed very largely by the opinions of readers as expressed in the questionnaire.

CORRESPONDENCE

Toronto, March 15

TAXATION OF STOCK DIVIDENDS

Sir: The ABC Co. was formed with a capitalization comprising common stock of no par value and 5% cumulative first preferred shares of $100 par value. The preferred stock paid one dividend and then went into default until this year when, seven years' arrears having accumulated, they were disposed of by the issue of second preferred stock in the following manner:

Each holder of an odd number of first preferred shares received 3 shares of new 5% cumulative redeemable second preferred stock of par value $10 plus $5 in cash for each share of first preferred stock held, so that the holder of, say, one share of first preferred, was given his congé in the form of 3 shares of second preferred stock plus $5, while the holder of 3 shares of first preferred stock received 10 shares of second preferred plus $5. Note that the cash payment never exceeded $5 per person.

Each holder of an even number of first preferred stock received second preferred stock to the value of the accumulated arrears. For example, a holder of 2 shares of first preferred stock entitled to $70 arrears received 7 shares of new second preferred stock of par value $10 but no cash.

But this ingenious method of differential treatment served only to delay the time when Destiny would claim her own. Both classes of preferred stock paid 2 dividends and then went into default. No dividend has ever been paid to common shareholders.

The tax problem is this: Having regard to the fact that neither class of preferred stock enjoyed any market and therefore could not have been sold, is the recipient of the stock dividend taxable? There is a point of equity here as (1) in many "odd-number" payments, and in all "even-number" payments, the company paid insufficient cash with which the recipient could have paid tax on the whole dividend, and (2) since the shares could not (and cannot) be sold, no fund of cash could have been created from which to make a tax payment. This whole problem is high-lighted in all its hideousness if one imagines a shareholder whose total income was not taxable before the receipt of the stock dividend but whose combined income then became taxable. The only way in which he could pay the tax would be by paying it out of non-taxable income.

The second preferred shares, therefore, perform no other function than that of recording a debt which may never be paid.

Perhaps you would like to tackle this problem under 3 assumptions regarding the distributable surplus of the ABC Co., namely, (1) that, at the time of payment of the stock dividend, the distributable surplus was equal to, or greater than, the dividend, (2) that it was less than the dividend, (3) that there was no surplus at all.

S. G. CHUBB.

Reply

The Canadian Revenue have always taken the view that any distribution of property by a company as a going concern to its shareholders is a dividend. Doubtless, therefore, the second issue of preferred shares would be held by the Revenue to constitute taxable income to the shareholders under ITA sec. 6(a) as being "received as, on account or in lieu of payment of, or in satisfaction of (i) dividends", even though the sum capitalized by the company represented capital surplus and not undistributed income on hand. That a dividend paid under such circumstances is "income" within the meaning of the Act is supported by the recent decision of the Income Tax Appeal Board in Crassweller v. M.N.R. (Tax Rev. p. 93) and the House of Lords in C.I.R. v. Reid's Trustees (Tax Rev. p. 77).

However, if the amount capitalized by the company in respect of the second issue of preferred shares represented undistributed income on hand, the shareholder recipients would be chargeable to tax under ITA sec. 9(3) on their proportionate interest in the undistributed income so capitalized, since it is fairly safe to assume that the transaction would be held to be either a "reorganization of the corporation" or a "readjustment of its capital stock" within the terms of such provision. In such case the amount of income received by the shareholders is the undistributed income so capitalized.

If the Revenue elects to assess under sec. 6(a) the amount chargeable to the shareholders would be the market value of the shares received (ITA, sec. 127(1)(a)). Under the IWTA it was Revenue practice to assess the value of stock dividends at the value of the surplus capitalized by the company in respect of such shares, without regard to the actual value of the shares. In my opinion there was no warrant in law for this course, and it is understood that the Revenue had already abandoned it, to some extent at least, prior to enactment of the new Act, which gives statutory force to the method of valuation described at the outset of this paragraph. (See secs. 6(a) and 127(1)(a)).

M. PIERCE.

SPEEDY "ASSESSMENT" OF 1948 TAXES

Vancouver, B.C.
May 30, 1949.

Sir: The May issue of the Tax Review reports (p. 79) that Mr. S. Knowles (C.C.F. Wpg. N. Centre) congratulated the Minister of National Revenue on the speed with which his department issued what he considers the official assessment of his income for the year 1948. Although the Minister appears to have made no comment, I wish to point out the erroneous interpretation by Mr. Knowles, in common with many other taxpayers, of the new procedure adopted by the Department of National Revenue.

As far as the taxpayer is concerned, the notice issued is of no more value than that of an interim receipt for the payment made, except that it shows in addition thereto, any balance of tax, or interest, for the year in question which may still be outstanding in accordance with the information filed by the taxpayer. It does not mean that the Department of National Revenue has approved the return as filed. From the point of view of the Department, however, it is definitely a "notice of assessment" and has been so designated to entitle the Department legally to advance the date on which the additional interest charge on unpaid taxes may be applied, as referred to in sec. 54(4) of the Income Tax Act, 1948.

PAUL RISING, C.A.

A JUDGE'S DUTY

"The Income Tax Act of 1918 is a taxing Act. There was some suggestion during the argument that it ought to be construed generously. I was in some doubt, when the argument was used, as to whom the generosity was to be extended, whether generous to the Crown or generous to the subject. But I do not think that any taxing Act should be construed 'generously'; it should be construed strictly. From the very foundation of the Courts of Common Law at Westminster it has always been the duty of His Majesty's Judges to protect the subject from exactions by the Crown. It is true that at the present time a Judge when he is appointed takes an oath to serve the King, but the older form of oath, going back almost beyond the time of legal memory, was that the Judge took an oath, it is true, to serve the King, but not only that, he took an oath to serve the King and his people. It was certainly the duty of the Judges — a duty which, except perhaps for the unhappy times of the 17th century, was always performed with courage by the Judges — to protect the subject from the exactions of the prerogative, and unless the taxing Act plainly requires the subject to contribute to the demands of the Crown, it is the duty of the Judges to protect the subject from the exactions." — per Macnaghten J. in Mosley v. George Wimpey & Co. (1945) 27 T. C. 315 at pp. 316-7.

RECENT TAX CASES

Borden Co. v. Minister of National Revenue

(Supreme Court of Canada, Kerwin, Taschereau, Rand, Kellock and Estey JJ., February 28, 1949)

Excess Profits Tax — Standard Profits — Company acquiring assets of other companies — Whether acquisition of its business as a going concern — E.P.T. Act, 1940, c. 32, sec. 4(2)

In 1937 appellant company, then in the business of manufacturing milk products, purchased the shares of 26 operating companies and all the assets and business of a subsidiary company, thereby re-entering the fluid milk business which for some years previous it had abandoned. On January 1, 1941 it purchased the assets of two of the last-mentioned companies and on January 1, 1942 it purchased the assets of a third such company, and thereafter the business of the three companies was merged in the business of appellant company. Appellant contended that it was entitled under sec. 4(2) of the *Excess Profits Tax Act*, 1940, c. 32 to add the standard profits of the three companies to its own standard profits in computing its excess profits tax for 1942. Section 4(2) provides:

> On the application of a taxpayer who acquired his business as a going concern after January 1, 1938, if the Minister is satisfied that the business carried on by the taxpayer is not substantially different from the business of his or its predecessor, he may direct that the standard profits of the said predecessor may be taken into account in ascertaining the standard profits of the said taxpayer.

The company's appeal was dismissed by Cameron J. in the Exchequer Court, [1947] C.T.C. 384. The company appealed to the Supreme Court of Canada.

Held (dismissing the appeal), sec. 4 (2) applies only to a new taxpayer who acquired its business as a going concern after the specified date, and does not apply to a taxpayer, such as the appellant, whose business after that date was the same business which it carried on before that date but merely enlarged by the purchase of the assets of other companies.

In view of the disposal of the appeal on this ground the majority of the Court did not find it necessary to express an opinion on the question whether the Minister's power to direct that the standard profits of the predecessor be taken into account was to direct the Board of Referees appointed under sec. 13 to exercise this function. Kerwin J., who delivered the judgment of the majority of the Court, expressed his tentative doubt of this construction, whilst Rand J. appeared to take the opposite view. Kellock J. expressed no opinion. In result it may be taken to remain an open question.

Appeal dismissed

DEPRECIATION ALLOWANCES — A PARADOX

In their respective budget addresses of recent date, the Canadian Minister of Finance and the British Chancellor of the Exchequer each proposed a new treatment of depreciation. But whereas the Canadian plan calls for the introduction of depreciation on the reducing balance method (and presumably the abandonment of straight-line depreciation) Sir Stafford offers the British taxpayer for the first time the straight-line method of depreciation as an alternative to the reducing balance method. There may be a moral here, but it escapes us.

The King v. Shore

(Exchequer Court of Canada, Cameron J., May 4, 1949)

Sales Tax — Excise Tax Act, R.S.C. 1927, c. 179, sec. 86(1) — Contract for manufacture of article — Exclusive sales rights — Whether manufacturer or holder of sales rights liable for sales tax

Shore made a contract with a manufacturing firm for the manufacture by them of a large number of toy electric irons exclusively for his use. It was agreed therein that the necessary dies would become Shore's property. The manufacturers also covenanted not to manufacture the article for a period of two years after completion of the contract. Shore sold the toys to department stores and jobbers. The Crown brought action against him for recovery of the amount of sales tax contending that he was the producer or manufacturer of the toy irons within the provision of the *Excise Tax Act,* R.S.C. 1927, c. 179, sec. 86(1)(a)(i). Shore contended that the manufacturing firm were the producers or manufacturers of the irons and as such were solely liable for payment of the tax. Sec. 2(c)(ii) of the Act declares:

> (c) 'manufacturer or producer' includes
>
> (ii) any person, firm or corporation which owns, holds, claims or uses any patent, proprietary, sales or other right to goods being manufactured, whether by them, in their name, or for or on their behalf by others, whether such person, firm or corporation sells, distributes, consigns, or otherwise disposes of the goods or not.

Held, Shore held a sales or other right to the goods being manufactured on his behalf and accordingly was the "producer or manufacturer" of the goods within the meaning of sec. 2(c)(ii) and as such was liable for sales tax on the sale price of the goods when sold by him: [*Palmolive Mfg. Co.* v. *The King* [1933] S.C.R. 131, applied.]

Held further, even if Shore did, as he contended, pay sales tax pursuant to invoices rendered by the manufacturing firm (which was not proved), such payment would not relieve him from his liability as the producer or manufacturer of the goods to pay sales tax to His Majesty.

Held also, Shore was liable to payment of a licence fee under sec. 95(1) of the Act.

Judgment for plaintiff.

Crassweller v. Minister of National Revenue[1]

(Income Tax Appeal Board, Hon. R. T. Graham, Chairman, W. S. Fisher K.C. and F. Monet K.C., May 2, 1949)

Income Tax — Dividend paid out of capital surplus — "Dividend" — Chargeable as income to shareholders — Income War Tax Act, R.S.C. 1927, c. 97, secs. 3(1), 18(1)

Crassweller was president and principal shareholder of a Dominion company which had on hand a capital surplus and undistributed income, in each case exceeding $1000. The company passed a by-law authorising the distribution of $1000 out of the capital surplus *pro rata* among the common shareholders in accordance with their shareholdings. Crassweller was assessed to income tax under the *Income*

[1]Reported in full 1 T.A.B.C. 1.

War Tax Act in respect to his portion of the amount so distributed. He appealed, contending that the sum distributed was capital.

Held, he was properly assessed in respect of such amount, and the appeal must be dismissed.

While the payment was not "an appropriation of [the company's] funds to its shareholders" within the meaning of IWTA sec. 18(1) so as to be chargeable to tax to the extent that the company had undistributed income on hand, it was a dividend, though not so described in the by-law authorising its payment, and was therefore income in the hands of the shareholders and chargeable under IWTA sec. 3.

Quaere as to the correct version of the phrase which appears as "appropriation . . . *to* a shareholder" in the English version of IWTA sec. 18(2) and "appropriation . . . *by* a shareholder" in the French version?

[*Reid's Trustees* v. *C.I.R.* [1949] 1 A.E.R. 361; *Mountain* v. *Bates* [1928] Ch. 682; *Hill* v. *Permanent Trustee Co. of N.S.W.* [1930] A.C. 720; *Northern Securities Co.* v. *The King* [1925] Ex. C.R. 156; *McConkey* v. *M.N.R.* [1937] Ex. C.R. 209; *In re Doughty* [1947] 1 Ch. 263, applied and discussed; *Dominion Companies Act,* 1934, c. 33, secs. 14(1)(u), 83(1) and (2); *Income War Tax Act,* R.S.C. 1927, c. 97, secs. 2(1)(f), 3(1) and 18(1) considered]

Appeal dismissed

ORDER IN COUNCIL

THE INCOME TAX REGULATIONS, PART VIII

P.C. 1913, April 26, 1949

HIS EXCELLENCY the Governor General in Council, on the recommendation of the Minister of National Revenue and under the authority of sec. 106 of The Income Tax Act, 1947-48, c. 52, is pleased to make the following regulations entitled "The Income Tax Regulations, Part VIII", and the said regulations are hereby made and established accordingly.

Canada Gazette, May 25, 1949.

PART VIII

Certificate for the Foreign Exchange Control Board

Sec. 800

800. Every person owning property having an aggregate value of $25,000 or more and who makes an application under The Foreign Exchange Control Act for a determination that he has ceased to be a resident shall obtain from the Minister a certificate that there are not outstanding any assessed taxes, interest or penalties payable by him in respect of his income, and that he is not in default of filing any prescribed return and shall file the certificate with the Foreign Exchange Control Board as a condition precedent to having his application considered.

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VOLUME 54 JUNE 1949 NUMBER 6

COMMENT AND OPINION

First Call

THE forty-seventh annual meeting of The Dominion Association of Chartered Accountants will be held in Toronto commencing on Saturday, September 10, and concluding on the following Friday. The timing is by no means fortuitous; it coincides with the closing of the Canadian National Exhibition held annually in the Queen City of Ontario. For the membership of the Association at large there will be general sessions for the discussion of problems of interest to the profession on Wednesday and Thursday, September 14 and 15, both in the morning and in the afternoon. The annual meeting itself of The Dominion Association of Chartered Accountants will be held on Friday morning, September 16. The closing dinner and dance takes place the same evening. Convention headquarters will be at Toronto's famed caravanserai, The Royal York Hotel. More on the annual meeting next month.

On Making Ourselves Understood

THIS title is stolen from the March 1949 *Monthly Letter* of The Royal Bank of Canada. The whole letter is devoted to this subject of self-expression and an advocation of plain talk and plain writing. Its concluding paragraph, which follows a quotation from an address of the Dean of the Faculty of Arts and Science of McGill University — "One of the first signs of education is the use of short expressive English instead of the muddled jargon of eight syllables which reflects a muddled mind" — is quoted in full.

> We in Canada are in a vulnerable position. Both official languages are subject to many outside influences—the United States radio, press, advertising and movies all have their impact on us. We cling to many French and British traditions and forms in our daily life and there is evidence of this in our speech and our writing. We are in a position to keep the best of the new expressions and to reject the worst. We can keep our languages alive, strong and useful, while guarding their fineness in the great tradition, pure, clear and flavoured with imagination and the traits of our own nationality.

The letter itself is written, we think, in plain and simple language and it is a joy to read, and a delight to read aloud. It points out that, in our conversation, we do not drone out endless sentences, full of top-heavy clauses and absurd phrases, and suggests that the reasons are that we might become lost or encounter words of whose pronunciation we are not sure.

Volume 1 of the *Report of the Royal Commission on Prices* is also to our mind a splendid example of plain writing. We were given it to read in order that we might draw some profound conclusions from it. At this point of our study, however, we have been so taken with the manner of its writing that any profundity will have to wait until later on or another

occasion. Its whole tone is simple and matter-of-fact; occasionally it finds its real emphasis in a use of adjectives and adverbs and sometimes by the presentation of a word one would not expect to find in such a document.

Consider the following paragraph,—

> The fact is that a serious rise in prices can occur even though everyone works efficiently and behaves in what seems to him or to her to be a perfectly reasonable manner. There may be no villains in the piece, only honest hard-working citizens.

That sentence could be said to have been spoken, not written. Who would have dreamed that a Royal Commission could have said "the fact is", or used the word "perfectly" so aptly, or conceived "no villains in the piece"? Again, "Nevertheless, there will always be resistance to taxation if only because of the feeling that it would be very pleasant for one if there were only other people who were taxed to keep spending down." The informality of that sentence packs a punch far heavier than if it had been written in the usual jargon.

Speaking of the success of price control, the Commission states: "Over and above all else we are convinced that the lid was kept on largely because the people of Canada were determined to keep it on." If, as we suppose, the use of "lid" in this case is slang, has any other Royal Commission appreciated the strength of such departure from the conventional?

Further interesting reading, from this point of view, is a symposium contained under the title "What kind of information do labour unions want in financial statements?" Five labour leaders have contributed their thoughts and we think their composition and manner of writing is clear, concise and first-rate. They make an interesting subject more interesting by the general simplicity of the words used in their statements quoted in *The Journal of Accountancy,* May 1949. Mr. Lane Kirkland, a member of the research staff A.F. of L., touches on the points we are trying to make here when he speaks of certain financial statements distributed to workers as being so highly condensed as to be virtually meaningless, and completely submerged in a mass of highly-slanted verbal embellishments. The unions want, in a figurative sense, more detail of figures with simple and concise captions and less presumptuousness and long-winded titles. As one says, "Complex and incomprehensible statements are useless to the readers."

As we progress in this writing, we are cheered by how much writing there is on the top of our desk at the moment which we can compliment. Mr. J. T. Bryden, assistant general manager, North American Life Assurance Company, in an address to the annual meeting of the Citizens Research Institute of Canada on the subject "Who Pays for What?" sets out his discussion on government fiscal policy in language that is restful and smooth but which holds at all times the attention of the listener or reader. "Governments have no money of their own. The moneys they expend must be extracted, either directly or indirectly, from the individuals who make up the State. These moneys must come either in the form of taxes on individual or corporate incomes, on properties or commodities, or by way of licences or fees, or in some cases by way of profits on government owned corporations. Each impost directly affects the ability of certain individuals to buy goods and services currently or to save for the future." We do not say that these sentences are as good as the writer of the *Royal Commission Report on Prices* could have made them (we can think of some simplifications ourselves), but they are clear and succinct.

And now we come to a paragraph which an esteemed accounting contemp-

orary thinks is well stated. Perhaps it is.

> The choice is then between (a) letting national income estimates be taken at their face value and misinterpreted because of incomplete awareness of the underlying assumptions and (b) attempting to have them used and discussed in terms of their relevance to this or that specific problem or issue of public policy in full cognizance of the assumptions upon which the concept rests and the compromises in measurement forced by lack of data. There is no question of discarding them because they may be misused. The alternative is between trying and not trying to ensure their intelligent use. Critical probing of the basic assumptions and exposition of the limitations of the estimates, despite the acute intellectual discomfort entailed, serves both to encourage the valid use of the estimates and to indicate the directions of further investigations.

Can you imagine staying awake through a speech like that?

And to come back to the Royal Bank *Monthly Letter,* there is quoted as an example of jargon a paragraph (written by Jacques Barzun for Harper's Magazine in an article commenting on the state of the language), dealing with a warning given to the British cotton industry.

> Unless all those working in the separate units are prepared, when necessary, to take into account the interests not only of the industry as a whole but also the broad interests of the nation, unless there is readiness both to agree and implement common policies when necessary for furthering such interests — there is little chance of a satisfactory outcome from any proposals.

Then Mr. Barzun goes on to quote by way of contrast,

> Gentlemen, we must all hang together, or assuredly we shall all hang separately.

To close, we are reminded of the tendency of corporation presidents to say that something or other having to do with the position of the company is not altogether unsatisfactory. We always wonder why they do not say, "We want you to look closely at our reserve position. Isn't it wonderful?"

POLITENESS DOES NOT ALWAYS PAY

A cheque is a "bill of exchange" drawn on a banker, payable on demand. A bill of exchange is an "unconditional order" in writing . . . requiring the person to whom it is addressed to pay . . . a sum certain in money. The definition of a bill of exchange applies to cheques.

The London Times recently made a plea for the "small change of conventional courtesy" and cited with approval the example of a gentleman who always wrote "please" before "pay" on his cheques.

In Little v. Slackford ((1828) Moody and Malkin 171), the English Courts were asked to decide whether the following document constituted a valid bill of exchange:

> "Mr. Little, please to let the bearer have seven pounds and place it to my account, and you will oblige
>
> Your humble servant,
>
> R. Slackford."

The Court decided that this was not a valid bill of exchange. "The paper", said Lord Tenterden, C.J., "does not purport to be a demand made by a party having a right to call on the other to pay."

Mr. Nigel Bridge, a member of the English Bar, cited the above case in a letter to the Times and contended that in view of the Court's decision, we must perforce go on being abrupt with our bankers.

The Australian Accountant, March 1949.

Punched Card Accounting from the Auditing Viewpoint

By Charles Goldsmith
(Branch Manager International Business Machines Company Limited)

The place in modern accountancy of the electric accounting machine and the tabulating card

INTRODUCTION

TO GIVE YOU a little of the background of punched cards, I would like briefly to take you back a few years and trace the progress of punched cards from their purely statistical use to their present vital connection with all accounting problems. In 1880, Dr. Herman Hollerith, a distinguished statistician who had been employed in that capacity by the United States government, realized the enormous difficulty the Census Bureau was having in reducing the mountains of facts gathered by the census takers into usable form. Census reports were not prepared for 5 years and not completed for 7 years. This meant that in another 3 years another census was due. Dr. Hollerith then invented the first tabulating machine for recording, compiling and tabulating census facts, a system which was to prove useful in far wider fields than those of the census and to introduce unprecedented speed, efficiency and precision into the organization of large masses of facts.

From this very modest beginning, continual development has given us today equipment and methods which can be applied to almost every accounting and statistical application in every type of industry. This continued development includes new and better machines, new and better design of existing machines, new and better ways of using all machines, new wider and more varied fields of use and improvement of the sales and service organization.

Continuous Development

This has been accomplished by constant engineering research, design and development of new machines and by schools at which attendance is open to all users and prospective users of business machine equipment. Special schools are also conducted periodically for specialized groups such as life insurance, casualty and fire insurance, railways, public utilities, educational groups; government — federal, state or provincial, and municipal; oil companies, meat packing and banking. In addition, schools are conducted for general industry, and schools for supervisors of installations are also held. Industrial consultants and some ac-

An address, delivered to the Chartered Accountants' Students' Society of Quebec, on November 18, 1948.

counting and auditing companies have had special schools conducted for their own executives.

This program of constant development and education has continued so that no longer is the punched card a weird system of holes punched in a card which only an expert can decipher, but a simple, efficient and accurate system of accounting.

Let me now dispose of a few old bromides:

1. Punched cards are useful for statistics but not for accounting.
2. What happens if you lose a card?
3. Punched cards are fine for payrolls but no good for accounts receivable.
4. Punched cards are no good in this or that industry because such and such a company threw them out.
5. Punched cards are useful in big companies but no good for small ones.

I do not believe that it is even necessary to comment on these. They all ignore the fact that punched cards have become an important, established accounting tool which will increase in use in the next ten years more than ever before.

Principles of The Punched Card Method

The art of accounting has developed along with business. The modern accountant has become expert in the quick and accurate handling of essential facts and figures. He has taken his place in the present-day organization as a major executive, or skilled adviser, because scientific management has become a vital factor in the operation of modern business.

Many mechanical devices have been perfected to aid the accountant in the handling of the mass of detailed information incident to modern business procedure. The majority of these devices are thoroughly understood by anyone familiar with manual methods. None of them, however, has equalled electric accounting machines in flexibility of application to all accounting functions. Since electric accounting machines, utilizing punched cards, solve accounting problems in a way quite different from that of the ordinary manual method, a clear understanding of this viewpoint is essential for a realization of their outstanding advantages.

The Tabulating Card

The basis of the punched card method is the tabulating card. All pertinent information, originally written or typed, is transcribed from the source records into tabulating cards by means of punched holes in predetermined positions of the card. A complete record of both classification and quantitative data is incorporated in a tabulating card for each unit or item. For example, in census work, a card is punched containing such data as date of birth, sex, colour, nativity, marital status, occupation, etc., of each inhabitant of a country; in sales analysis, a card is punched for each product appearing on an invoice showing salesman, customer, transaction date, invoice number, branch office, quantity, cost involved in the transaction, etc.; and in accounts receivable, a card is punched for each debit or credit transaction affecting a customer's account, showing amount, nature of transaction, ledger account, etc. These punched cards will then serve to actuate the various machines into which they are subsequently placed.

The automatic compilation of facts recorded in tabulating cards is performed by electricity. The passage of the perforated cards under brush contacts permits an electrical circuit to be completed through the card at the position of the punched hole. This closing

Associated with the punched card accounting business since 1924, Mr. Charles Goldsmith joined International Business Machines Company in Montreal in 1933 and since 1945 has been manager of the Electric Accounting Machine Division of that office. He is a member of the Montreal chapter of the Cost and Management Institute.

of an electrical circuit at a definite time and from a fixed position on the card is the basis upon which the various electric accounting machines function. The tabulating card is made of paper stock of fine quality, manufactured especially for this use. The material is carefully processed to make it a non-conductor of electricity, to obtain the necessary degree of durability and to insure an even weight and thickness.

Eighty Columns

There are 80 columns of digits across the card. Each column contains 12 punching positions. Of these 10 are indicated by the printed digits 0 to 9, which correspond to the digits of the numerical data to be punched. The 11th and 12th punching positions are at the top of the card and are not indicated by printed numerals. If the 80-column card were completely punched it would contain 960 holes — 80 columns of 12 positions each; but seldom are more than 2 holes punched in a single column.

The first step in the use of a card for a particular record is the designation of groups of columns as "fields". Each field defines a section of the card in which one particular type of information will always appear. Each field is assigned a sufficient number of columns to include the largest number of digits which it will be called upon to accommodate. For instance, since the greatest number of months is 12 (a 2-digit number), 2 columns are sufficient for recording this information. Since the greatest number of days in a month is 31, this field also requires only 2 columns.

Registration of Data

At this point it is obvious that all information, whether descriptive or numerical, must be registered in the card in the form of punched holes. The registration of all data is a simple matter. The digits of the numbers to be transcribed correspond to the digits printed on the card. Descriptive information, such as the names of persons, companies or products, may be either coded numerically or punched by means of an alphabetical keyboard which will automatically punch the 2 holes by the depression of one alphabetic key, and thus enable the accounting machine to identify and print alphabetic characters. This dissimilarity in punching accounts for the difference in results between the 2 types of accounting machines—the straight numerical and the combination alphabetic and numerical. Tabulated reports from the former show all data in numerical form. Tabulated reports from the latter give both descriptive (alphabetic) and numerical data, no decoding being necessary.

Electric Punching Machine

The transcription of original numerical data to tabulating cards in the form of punched holes may be accomplished by means of an electric punching machine. This machine has a keyboard of 12 recording keys, one for each punching position of a column. As a key is depressed a hole is cut and the card advances automatically to the next column to be punched. The automatic features

of the machine and the simplicity of the keyboard make the transcription of written data into punched hole form easy, rapid and efficient. When the punching has been completed, the cards are usually in miscellaneous order. The next step is to arrange them in sequence by some desired classification — that is, to group them according to some information which is punched in them. The electric sorting machine is used for this purpose.

The operation of the electric sorting machine is based on the position of the punched hole in a vertical column of the card. As the cards pass through the machine a brush contact is made through the hole, causing an electrical circuit to be closed. This momentary circuit causes the card to be directed to a receiving pocket which corresponds to the position of the punched hole. For example, a card punched "9" in the column under consideration is directed to the 9 pocket; a card punched "6" in the same column is directed to the 6 pocket, etc. The automatic sort is made on one column at a time. It is apparent, therefore, that to arrange a group of cards in numerical sequence according to the data punched in a 3-column field, the group is passed through the sorting machine 3 times. The sort is made first on the units column, then on the tens column and finally on the hundreds column. The electric sorting machine is entirely automatic and operates at a speed of 450 to 650 cards a minute.

Electric Accounting Machine

The automatic compilation of the punched data into printed reports is accomplished by the electric accounting machine which is a combined adding, subtracting and printing machine. Punched cards passing through this machine actuate the various adding counters and printing mechanisms — again by means of electrical contacts. Each electric accounting machine is so designed that it provides complete flexibility in the arrangement of the compiled and printed data on the report form. The machine is entirely automatic, and operates at a speed of 150 cards a minute. It is so designed that total or balance-forward cards can be punched simultaneously with the printing of reports. Its various features are best demonstrated by the results produced.

For the sake of brevity and clearness no reference has been made here to the auxiliary machines, attachments and devices which are an important part of the full line of electric accounting machines. In general, all follow the same operating principles which have been described. Their purpose is to accomplish automatically the supplementary tasks which are related to the classifying, compiling and printing of business facts; for example, summarization of to-date or balance-forward data, multiplication, printing on the tabulating card the information punched therein, etc. The entire line is well adapted to perform automatically most of the routine work of accounting.

Fundamentals of Recording System

To appreciate fully the value of the machines, one should be familiar with the steps in the development of accounting records as well as the development of the mechanical devices to facilitate their preparation. Two fundamental conditions have become established as the basic requirements of a good record-keeping system:

1. It is necessary that the record be so explicit that at any subsequent time the exact nature of the transaction may be readily perceived without the aid of memory.

2. It is necessary that the transaction be so classified that at any time the combined effect of like transactions may be readily ascertained.

These principles have been generally accepted by accountants but in most cases emphasis has been placed on one or the other of the principles resulting in the modification of the accounting system to obtain the desired end. For a long period of time the emphasis was placed upon the maintenance of complete detailed historical records while much of the phase of classifying to prepare up-to-the-minute summaries of like transactions was ignored. Since the beginning of the present century, however, the condition has been reversed. Today, because of the tremendous number of transactions which compose the daily business of a medium-sized or large company, emphasis is placed upon the summarization of like transactions.

The Place of the Typewriter

The development of the typewriter was probably the most important forward step in modern accounting. It obviously simplified the problem of preparing a journal which would serve as an historical record of the business transactions, by the preparation of a carbon copy of the original document describing the transaction. Take the sales journal as a practical example: A carbon copy of an invoice constitutes as complete an historical record as can possibly be prepared of any sales transaction, and consequently a file of copies of sales invoices in numerical sequence could be made to serve as a sales journal. Under such a routine it is simple to understand why the preparation of complete historical records was in the majority of cases relegated to a position of secondary importance. The change, however, was a gradual one; for it took business organizations a long time to give up the idea that accounting records had to be maintained in files of bound books. The outstanding advantages of the typewriter eventually effected a change of older accounting restrictions concerning bound journals and established loose-leaf records as an acceptable form of accounting record.

The development of loose-leaf ledgers paved the way for an open-minded approach to accounting problems and the logical advantages that could be made to accrue from the intelligent application of automatic machinery to accounting routines. The simplification of the preparation of journals and registers was accompanied by an increased amount of investigation into the ways and means of meeting the growing problem of analysis of accounting records to furnish essential figure-facts upon which management would be able to base its scientific planning and organization for more profitable operation. The job of classifying and accumulating these vital management statistics was assigned to the accounting and record-keeping departments. When the accountant was confronted with these newer and larger problems, it was only a matter of course that he turned to investigate the possibilities of machinery to simplify the work in the same manner as a writing machine had previously helped in simplifying the historical record-keeping.

Evolution of Modern Accounting Methods

Three major phases which are characteristic of accounting work — recording, classifying and accumulating — have all been subject to improvement by the use of ingenious devices and mechanical equipment. The most notable steps in this evolution of modern accounting methods in the approximate sequence of their development and use are:

1. The development of multiple-column journals and subsidiary ledgers.
2. The application of unit records to simplify analysis.
3. The improvement of card-record and loose-leaf systems.
4. The perfection of multiple-counter adding and printing machines.
5. The adaptation of punched unit card records and automatic sorting and tabulating machines to accounting routines.

Regardless of the detailed routine which may be applied, the original data and ultimate objectives are essentially the same. Only the means to the end is subject to variation. Each machine or group of machines possesses inherent advantages, which, in the final analysis, will be the determining factor in the decision concerning the method that will be most practical for a particular job. The use of typewriters and manually operated machines was a logical step in the development of accounting methods; the adoption of punched unit card records and automatic sorting and tabulating machines may be considered a further step forward in a machine age.

The Unit Record

The method developed was based upon the creation of a unit record. This may be described as a document which bears all of the pertinent information regarding a single transaction or condition that is to serve as the unit of analysis. Thus, a unit record concerning sales usually carries all the information regarding the sale of one product to one customer at one time. The various methods of creating unit records need not be discussed here. Regardless of how the original unit records were prepared, even a superficial analysis would reveal that 4 basic methods of accumulating totals from them exist:

1. Mental calculation and manual posting of totals.
2. Mechanical addition in a counter which is actuated by manual key depressions and transcriptions of totals by hand.
3. Mechanical addition in a counter, as above, and automatic printing of detail information and totals.
4. Automatically actuated counters (involving no key depressions at the time of accumulation) with automatically printed detail and totals.

The first three are well-known. The last, which is the electric accounting machine method, is something of a mystery to those people who have not had the opportunity of operate it or observe its performance. Although the mechanism itself may seem intricate, the principle is simple: The electric accounting machine is so constructed that as a punched tabulating card passes through it, each punched hole actuates one or more counters of the machine in just the same manner as an operator's finger actuates the counter of a manual machine by the depression of a key.

Effect of Specialization

Because business is by nature complex, the growth in volume of transactions and size of organizations through merger and expansion was accompanied by an increased number of managerial problems and responsibilities and this necessitated the division of management control among several executives so that proper attention might be accorded to each of the many operating problems which arose. Specialization made its appearance — a specialization based upon functions. Each executive was called upon to serve in a particular field, such as selling, manufacturing, engineering, purchasing or the like.

Accounting record-keeping followed similar lines of division as a matter of

course. The establishment of numerous auxiliary accounting records in addition to the summary entries of general accounting proved to be necessary. These records were essential to furnish the summarized figure-facts that would satisfy the requirements of each functional executive for scientific or "planned" business management.

Application of Punched Cards to Accounting

General Accounting

At the close of the month all general ledger cards are sorted by account number and tabulated to prepare the entries to the general ledger accounts. At the same time a summary card may be punched each month, showing the balance in each account. These summary cards can be combined with the detail charges and credits for the succeeding month, to obtain a new monthly balance. Following the tabulation of account totals, the cards are replaced in the machine and listed to print the account, reference number and amount punched in each card. This detail listing serves to support the totals printed in the previous tabulation by account. It is preserved as a permanent reference. This report acts as our first audit control.

Any special analyses and subsidiary statements which may be desired are easily prepared. The proper cards are selected by the sorting machine, and the supplementary reports are tabulated. These may be prepared according to any sequence that will simplify the subsequent auditing routines.

Material Accounting

Accounting for materials is acknowledged today to be no less important than the final accounting for the balance sheet and profit and loss statement. The prevalence of standard costs, including material, labour and expense, is sufficient evidence that control of these principal elements of expenditure is essential to profitable operation. Adequate control requires that material records be kept in detail, showing the specific material used, the particular job or product charged and the cost. Material accounting should provide accurate statements of the capital invested in materials. These requirements call for precision in the compiling of a voluminous amount of detail.

A tabulating card is punched for each item of material in stores — raw materials, semi-finished parts and supplies. The cards which show a complete description of the item, its cost and the quantity in stock, are placed in an inventory file. Other tabulating cards are punched for subsequent receipts of material, showing item identification, quantity and amount. These too are placed in the inventory file by item number. Materials are issued by storekeepers only upon presentation of a formal requisition, properly filled out and authorized. These requisitions may be tabulating cards, showing the information in both written and punched form. The information includes unit price, extended amount and job or account charged. Parts requisitions may contain labour and expense amounts also, thus furnishing complete order costs for processed parts. The written cards, signed by the storekeeper, are forwarded to the records department.

The written information is punched in the requisition cards. No computation of extensions is required since these can be both computed and punched automatically. Daily or periodically, the requisition cards are tabulated with the inventory and receipt cards to obtain a report of the stock position. All deductions and additions are computed automatically by the machine and new balances are

printed. Summary cards, punched during the tabulation, represent the new balances of each item in stock, and these constitute the materials inventory file for the opening of the ensuing period. This file supplants the materials ledger — usually posted manually — since the card file is itself a complete record of the status of materials.

After the preparation of new balance cards, the direct materials requisition cards are available for sorting and tabulating for the work-in-process accounts. In many organizations indirect material is budgeted and actual amounts are measured against budgeted amounts periodically, sometimes even daily. The indirect materials requisition cards are sorted by department and account and tabulated with budget master cards to prepare the budget report, showing actual and budgeted amounts and the variances from budget. Summary cards, produced during this tabulation, are used to make journal entries for expense materials. The detail cards are then released to prepare various distribution analyses, and are finally filed for future use in preparing statistical reports.

Payroll and Labour Accounting

Accurate production costs are essential for proper control of manufacturing. Payroll and labour distribution records must, therefore, meet the requirements of cost accounting as well as those of general accounting. The allocation of labour costs to the particular cost unit — order, part and operation, process — involves more detailed information than is required for general accounting. The two records must agree.

The employee's time card is usually a dual tabulating card — that is, both written and punched. This card may be either a job ticket, covering a single job or a daily time report, recording all jobs worked upon during the day. It shows the date, identification of the job and the employee, starting and stopping time, rate, elapsed time and amount earned. After being filled out by the employee, the time card contains in written form the identification information, starting and stopping clock registrations and pieces produced. At the end of the day the elapsed time is computed from the clock registrations and checked with that shown on the attendance record. The cards are rated, extended and punched. The computing and punching of extensions are performed automatically. If the time cards are job tickets, these are listed daily, controlling on employee number, to prepare a labour summary. Simultaneously, a summary card is punched for each employee, showing total hours and amount. These are used to tabulate the payroll. The direct job tickets are placed in the work-in-process file by cost unit; the indirect tickets are filed by account number. If the time cards are daily time reports, these contain the total hours and amount in punched form. One distribution card is punched for every job on the time report, showing complete data for each. The time report cards are used to tabulate the payroll; the direct distribution cards are placed in the work-in-process file, and the indirect cards in the expense labour distribution file.

Cards are punched for each payroll deduction — such as insurance, savings, purchases, advances — and are filed to be included in the payroll tabulations. A permanent file of master cards is also maintained, which show employee's name, department and clock number. At the end of each payroll period, the master, payroll and deductions cards are machine-sorted together by department and employee number, and tabu-

lated on the payroll sheet. Deductions are made automatically, and names as well as numbers may be printed. During the printing of the payroll, summary cards may be punched showing the earnings for each employee; these cards may also serve as the payroll cheques themselves. The summary cards may be tabulated for current wage statistics and, at the end of the year, for income tax reports.

At the end of the accounting period, the cards which have accumulated in the distribution file are tabulated to obtain the distribution of direct and indirect labour costs from which journal entries are prepared charging and crediting the particular direct and indirect labour accounts affected. If an order cost system is in effect, orders are closed and costed immediately upon their completion. Direct labor cards are tabulated (with materials cards) to secure the direct cost. Burden rates are then applied to obtain total costs. Supplementary reports, also, such as payroll analyses, efficiency reports, wage incentive reports and wage studies of various types, may be prepared from these same payroll and distribution cards.

Accounts Payable

The nature of the particular accounts-payable system of an organization exercises important effects, both internal and external. It should provide prompt payment of creditors, the securing of all profitable discounts and an accurate statement of the total liabilities of the business. Expense distribution, compiled from the same sources, must be completed early for the monthly closing. These records involve a large amount of detail with a peak load at the end of the month if the method is one of individual posting and balancing. Under the punched card method no posting is required, with the exception of transcribing the source data into punched-hole form. Balances are obtained automatically by the action of the machine. Month-end peak loads are eliminated.

A tabulating card is punched from each invoice. The cards are first listed by invoice number to prepare the invoice register. A tabulation is then made by due dates, the totals are posted to a control, and the cards are placed in an unpaid file by due date. A few days before each due date the cards for the day in question are removed and tabulated for a total which is checked to the control. The tabulated commitment statement is forwarded to the treasurer as advance notification of cash requirements on each due date. The cards for invoices due are sorted by vendor, placed in the electric accounting machine, and listed on remittance statements, a separate sheet for each vendor. Credit amounts, punched in credit cards, are deducted automatically by the machine, and the net total is printed on the remittance statement. A cheque is drawn for the net amount and mailed with the remittance statement to the creditor. The remittance statement may be a separate form distinct from the cheque or it may be combined with the cheque, separable from it by a line of perforations. The cheque itself may be a tabulating card.

At the time of punching an accounts-payable card from each invoice, a second type of card is punched, one card for each distribution account appearing on the invoice. The two sets of cards are tabulated together for a balance. This automatic check, established at the outset, with the subsequent balancing of all reports to a control, eliminates manual checking and guarantees the agreement of account distribution with actual liabilities incurred

during the month. The distribution cards are filed until the end of the month when they are electrically sorted and tabulated by account number to prepare the account distribution statements. Purchase distribution reports also may be tabulated, showing purchases analyzed by account numbers, commodities and vendors. Any special or subsidiary reports are easily prepared by selecting and resorting the proper cards.

Most general ledger charges consist of invoices. Therefore, with a small increase in card punching, the balance of general ledger entries, originating outside of invoices, may also be recorded in punched card form with the result that the general ledger itself, in addition to the preliminary records, is automatically prepared.

Finished Stock Control

The chief problem in securing an effectual control of finished stock is that of coordinating the contributing data. These include continuous records of all activities which affect the status of finished stock, either directly or indirectly. All these facts should be assembled into a single report, in detail by stock number or item classification. The report should be available as frequently as is useful to the management, and when completed should be up-to-date. These requirements have been difficult to meet, which accounts for the fact that scientific control of finished stock has rarely been achieved to its fullest extent. Recent developments in the punched card method make such control entirely practicable.

A tabulating card is punched for each single transaction originating from every source which affects the stock position — namely, customers' orders, production or purchase orders, production finished or purchases received, shipments, and all types of adjustments, such as transfers, cancelled orders, waste, shrinkage, customers' returns. The card form is designed to contain complete identification of the item and the transaction, and also separate quantity fields for stock on hand, unfilled orders, due from factory or vendor, and sales. Each transaction is recorded in the proper quantity field, the other fields remaining unpunched. The cards are proved and *balanced to controls daily,* and placed in the stock file by item identification number.

In addition to the individual transaction cards, the stock file contains balance cards showing the balance forward in each of the "status" fields. The cards in the current file are tabulated at predetermined intervals to prepare the "position" report, so called because it shows the complete position regarding finished stock, both actual and developing. The alignment of the punching of quantities causes all transaction cards to be registered only in those counters of the machine whose quantities they properly affect. Deductions are performed automatically by the machine, and a net total is printed for each item. During the process of tabulation a summary card is punched for each item, showing the new net balances. If desired, sales to date may be accumulated in the same manner and printed in a separate field on the report.

The frequency of reports is governed entirely by the requirements of the particular company. The method accommodates itself equally well to a daily, weekly or monthly schedule. The position report may include only active items, and may be prepared daily. Since normally only a portion of the entire line moves daily, the report is brief and yet brings to the attention of the execu-

tive all items which potentially require action. Such daily reports may be supplemented quarterly by a tabulation showing the entire line. Tabulations also may be made of the inactive items.

With each punching of balance cards, the detail cards are released from the current file. From them numerous valuable subsidiary reports may be prepared in connection with production costs, sales analysis, accounts receivable, branch inventories and special studies.

Physical Inventory

The chief purpose of a physical inventory is to evaluate stock on hand in order to adjust this asset in the general ledger and in the detail stock records. A second purpose, scarcely less important, is to analyze stock into various significant classifications. The profitable disposition of present stock and the planning of future activity are greatly simplified by the use of such analyses. The usual results are a reduced inventory investment and an increased stock turnover. By the punched card method the inventory-taking is accomplished in a minimum length of time — an important point, since most organizations find it necessary to suspend production operations during this period. The accounting information is available shortly after the inventory has been taken — often the following day. Various statistical reports, which under a manual method would require so much time as to be prohibitive, are completed in a few days.

A dual stub tabulating card is used to record the inventory count, one card for each item of stock. The cards are serially numbered on the card itself and on the detachable stub. The serial number is prepunched at the card factory. The card form provides for information, in both written and punched form, covering a description of the item in all detail, its quantity, unit price and total price. The identifying information and unit price are written and punched previous to the inventory-taking in order to reduce the time required later for listing the inventory and punching the cards. The cards are issued to the inventory-takers by serial number, and each one must be accounted for when the listing is completed and the cards have been turned in to the accounting department.

The quantity of each item in stock is counted and written on the proper card, each count usually being checked by a second counter. The cards are finally detached from their stubs and the stub is affixed to the article or bin as a visual indication that the item has been inventoried. The serial number on the stub serves to identify the latter with its tabulating card in the event that a re-count of particular items is desired. The tabulating cards are sorted by serial number and machine-listed to detect any missing cards. Missing numbers are automatically signalled by the accounting machine. After all cards have been accounted for it remains only for the quantity, or quantity and extension, to be punched.

By means of the punched card procedure known as "progressive digiting" the extension of individual items may be omitted altogether if only total values by departments are required. From the punched quantity and unit price the electric accounting machine accumulates the total values. Through the use of the digiting method total values for labour and material, cost and market, or other combinations of costing and pricing may be secured simultaneously. If extensions are required for each card, these are computed and punched automatically from the quantity and unit price already punched in the cards.

The cards are tabulated to obtain the required accounting totals, either by departments or in total. Following this a listing is made by stock number, which serves as a support for the accounting totals and as a cross reference with the previous listing by tag number. Any special inventory analyses which are desired may be provided for by including the proper punching when the cards are originally prepared, and are easily obtained by electric sorting and tabulating after the accounting work has been completed.

Sales Accounting

Selling and the cost of selling are matters of serious concern to present-day business. Both of these problems are subject to scientific control similar to that which has been so successfully applied to production. The first essential for such control is the possession of detailed information covering all the facts which pertain to sales activity. The specific factors to be included among the sales analyses for a particular company depend upon the type of business. In general these factors include the product itself in all pertinent classifications, the extent and character of demand, and the channels through which the product is brought to its market. Formerly the securing of such sales analyses was not practical because the amounts of time and money required were prohibitive. With punched cards, however, this is one of the most appropriate and profitable applications since the value of the machines increases with the amount of detail to be classified and compiled.

A tabulating card is punched for each item or classification on the customer's invoice, showing, for example, customer number, salesman, district or territory, trade class, complete item identification and amount. The cards are balanced to a control established by a total of each group of invoices and filed until required, at which time they are sorted and tabulated to prepare the various analyses desired. Since all reports are run from a single set of cards, their totals are certain to be in agreement, and accuracy is assured. Accumulative reports are prepared with no extra effort by the use of the periodic summary cards, automatically punched.

The sales analysis card may be used also to provide essential information for the general ledger. Accounts such as sales, returns, cost of goods sold, and other real and nominal accounts may be posted from or checked with the sales analysis reports. Salesmen's commission statements, royalty statements and tax statements also may be prepared from the sales analysis cards.

The repeated use of a single card for many purposes is one of the conspicuous advantages exclusive to the punched-hole method. All individual postings are eliminated. The tabulating card once punched and proved is permanent and unalterable. Consequently, the danger of the transposition, omission or duplication of figures is entirely removed.

Accounts Receivable

Accounts receivable is one of the most important accounts to be found in the books of any industrial or commercial organization. It is upon accounts receivable that an organization principally depends for the income with which to meet maturing obligations and to continue operations. Punched card method provides the necessary means for performing economically the detail work involved in the accounts-receivable procedure. It reduces errors, insures the prompt rendering of statements and places no limitations upon

the selection of the particular type of statement which is best adapted to the needs of the individual business.

A master duplicating card and an index tab card are first set up for each account, showing customer number, name and address, and any credit information desired, both in written and punched form. A debit card is punched from each invoice. The common information from those invoices which apply to a single customer is duplicated (that is, punched automatically) in the debit cards by means of the master duplicating card. The rapidity of duplication adds considerably to the speed of punching. The accounts-receivable debit card may be a summary card punched automatically from a tabulation of the sales-analysis detail cards. The debit cards are balanced to a control and placed in the current accounts-receivable file by account number, behind their corresponding index tab cards.

There are several methods of applying payments. The choice of a particular method necessarily depends upon the requirements of the individual business. From the remittance slip the cash received is recorded in a tabulating card, either in the corresponding debit card itself or in a separate credit card. The paid debit cards may be removed daily from the current file. In this event, the accounts-receivable file contains only the open items, and continues to contain such items until they are cancelled by payment.

At the end of the month the open file is first tabulated by account number for the trial balance and then listed upon the customers' statements. The original statements are mailed to customers and the duplicates retained for reference. The open file may be started anew each month by punching a balance-forward card for each month's balance. Current debit and credit cards are then punched and placed in the open file. No cards are withdrawn during the month. Each month's statement is complete in itself, showing the old balance, every debit and credit item of the current month, and a new balance.

Under some conditions the tabulating card may serve as the invoice itself. In this case the card contains its information in both written and punched form. After the cards have been used to tabulate the statements, those applying to each statement are attached thereto, as a support, and sent to the customer.

Following the mailing of statements, an aged trial balance is tabulated, showing the amounts owing for the current month and for periods over 30, 60 and 90 days. The cards, both debit and credit, for the month just ended are next tabulated to prepare a history of customer's account, a separate sheet for each customer.

If a separate credit card is employed, the cash book and deposit slip may also be tabulated records, prepared simultaneously by means of an overlapping flyleaf form and carbon paper. This provides an automatic balance of accounts receivable with the general accounting records. The accounts-receivable records may be combined with those for billing.

Budgetary Control

The extensive adoption of budgetary control is one of the most important recent developments in management. Budgeting is a subject of keen interest among business leaders everywhere, either because they are operating under a budget or because they feel the need of doing so.

The successful budget requires that, first, estimated income and costs, and

second, variance of actual from standard be broken down by item or classification, and that this variance be known promptly at the close of the period. These requirements formerly constituted the chief impediments in the operation of the budget, from the viewpoints both of clerical cost and of time. With the use of punched cards, however, budgeting becomes a thoroughly practicable undertaking, and a valuable means of current control and of future planning.

Detail cards are punched daily for each item of sales, material, labour and expense. These are first used in their respective current accounting procedures. After they have served this purpose they are sorted and tabulated by budget classification. Budget cards are punched monthly, showing department, item or classification, and the budget amount. These are combined with the detail cards and a tabulation is prepared showing actual amount, budget amount, and the amount over or under the budget. No manual computation is necessary, the subtraction for variances being accomplished automatically.

Accumulated amounts for the period to date — actual budget and variance — are also computed automatically. The total amounts for the first month of the period are punched in new cards by the automatic summary punch at the time the budget report is tabulated. These total cards are included for tabulation with the succeeding month's budget and detail cards. In this way the accumulated amounts for the period to date are automatically carried forward each month. (In addition to preparing the periodic budget reports, the detail cards are used to make a variety of analyses upon which the forecasts for a new budget period are based.)

With the last day's detail cards, all punching for the month is complete, and the budget report is ready to be tabulated, the total or balance-forward cards and the budget cards being already available. The printed reports as they issue from the machine are complete in detail, accurate against controls, and ready for the attention of executives while their contents are still news of the current status and when effective remedial measures may be taken.

Billing

Billing is one function common to all business concerns no matter what their particular type of activity may be. It is one of the most frequent points of contact between buyer and seller. The billing procedure also has a direct bearing upon many of the internal operations of a business. It is apparent, therefore, that speed and accuracy are essential. Under the punched card method many of the operations involved in billing can be performed in advance of the receipt of the order. This often leaves little more than the printing of the bill to be accomplished at the time of billing. The bill is produced automatically by the action of the machines. Neither manual nor key-posting is required. Billing totals are assured of being in agreement with the original records from which the cards were punched, and with any records subsequently produced from the same punched cards.

A file of customer code cards is maintained, which show in both printed and punched form, the customer's name and address, and any credit data which is desired. From the customer's order the proper code card is withdrawn from the file and used to duplicate the common customer information in the detail cards. A detail card is punched for each item on the order, containing

a description of the item, the quantity, price and extension. The detail cards and name and address cards are combined and listed by the electric accounting machine to print a multiple-copy set of records, one set for each customer. These may be used as the internal order, the duplicates serving as packing slips and warehouse, office and salesman's records. In this case, when the order is ready for shipping the same cards are used to print a multiple-copy set of invoices, the duplicates serving as accounts-receivable, general office and statistical copies. In other cases, the original listing may be used both as the order and as the invoice. Under different conditions the detail cards may be punched from shipping memos after shipment has been made. The invoices are checked to the warehouse or shipping records, and extensions are verified. After this operation the customer's invoices are placed in window envelopes and mailed.

If the product is a standard one, and the same quantities recur frequently on customers' orders, a reservoir file of prepunched cards may be used to supply the item information. These cards show a description of the item, quantity, price and extension, and are filed by item number. The file always contains a number of cards for every quantity potentially appearing on customers' orders — or for smaller quantities which by addition can be used to compile such quantities. For example, the quantity "142" might be represented by three cards, those for 100, 40 and 2 respectively. The prepunching is performed automatically. As orders are received, prepunched cards for each item are removed from the reservoir file to make up the quantity specified. If prices change so frequently that the prepunching of price and extension is not practicable, the price is written on the order and punched in the card. From the punched quantity and price, the computation and punching of the extension are performed automatically.

If the product is received and issued in standard units, the reservoir file may become a stock file containing a prepunched card for each unit in stock. Receipts are recorded by the insertion of additional cards in the file, disbursements by the removal of cards. The cards removed are used to print customers' invoices. Under this unit-control plan the prepunched file represents current stock at all times, and may be tabulated for periodic stock reports. Under all the above methods the detail billing cards, or summary cards prepared from them, may be used currently in the accounts-receivable and inventory procedures. The same cards are finally available for preparing various statistical analyses pertaining to shipments.

Effective Accounting Systems

By J. J. Macdonell, C.A.

The organization and operation of an efficient accounting system

THE study of accounting systems and methods is receiving greater attention in industry and in the accounting profession in Canada in these past few years. This increased interest is due, no doubt, to a growing realization by management and by accountants of the benefits to be derived from a constructive plan of systems improvement.

Any system must be appraised in terms of the purposes which it is intended to fulfil. In the case of an accounting system the purposes may be defined as:

(1) to serve management effectively (the interpretive purpose)

(2) to maintain accounting and related records accurately and efficiently (the recording purpose)

(3) to provide for adequate protection of assets and for proper precautions against their misuse (the protective purpose).

In discussing an effective accounting system let us first look at the characteristics of a good system and then let us consider ways and means of developing and maintaining one.

In appraising an accounting system the four essential characteristics to be considered are: organization, procedures, control and reporting.

Organization

No system can function well without the foundation of good organization which, for accounting systems, usually means:

(1) The establishment of a sound organization plan well adapted to the needs of the business.

(2) The allocation of work and of staff so as to apply an appropriate proportion of the total effort to each of the three above-mentioned purposes of an accounting system.

(3) The clear definition of the functions, duties and responsibilities of each working unit and of each individual in the organization.

A most desirable feature of a good organization is a manual, comprising charts showing clearly the lines of authority together with lists of duties and responsibilities of each supervisor and working unit. Although the use of organization manuals is not yet a standard practice of Canadian business, nevertheless such manuals are almost essential to ensure the smooth functioning of an accounting system. Organization charts and manuals are of little use unless they

are distributed to members of the organization and are kept up to date. To make sure that these important steps are taken some companies assign to one person on the staff the definite responsibility for making all changes and issuing revised charts and sheets when necessary. Without some such orderly assignment of responsibility for keeping an organization manual up to date and the information adequately disseminated it nearly always becomes a haphazard affair on which very little reliance can be placed.

Even with a good organization plan backed up by an organization manual, difficulties may occur in the administration of the plan both in the operation of procedures and in the exercise of supervision.

The use of clearly written procedures for at least the more important functions is necessary for a system to operate satisfactorily. In this connection an indication of a good system is the use of what may be termed a "procedure for procedures" which tends to prevent unauthorized changes being made that may materially impair the internal control and efficiency of the entire system. More will be said later about this feature of a good system.

The effectiveness with which supervision is exercised under the organization plan in achieving the purposes of the system is influenced by such factors as: the use of committees to deal with accounting matters requiring co-ordinated consideration and action; the use of work schedules; the maintenance of schedules for the preparation and release of the more important reports; and the manner in which control is applied to ensure that procedures are carried out in accordance with instructions. Sometimes too few staff functions (as distinct from regular functions) exist to permit the smooth operation of the accounting organization, and as a result supervisors are burdened with tasks which can be performed better by persons or working units with no responsibility for administering or performing regularly scheduled tasks called for by the system. A systems and methods unit is an example of a useful type of staff function to which later reference will be made.

Another vitally important consideration in appraising an accounting organization is the quality and number of the employees in relation to requirements. The method of selecting new employees is almost as important to the system as the general level of ability of the present staff, since haphazard selection and lack of admission standards for accounting and clerical employees will contribute to the downfall of a basically good system. The establishment of salary ranges for each accounting and clerical job is an elementary but essential step in the development of a strong accounting organization. Much useful reference material is readily available concerning job evaluation techniques and a simple workable plan can often be developed successfully under the direction of a senior accounting official.

Training methods are also of great importance in the development of a good organization. Frequently the only job training which a new employee receives is the verbal information that he obtains from an employee who is being transferred to another position or has resigned. Under such circumstances the information given the new employee is usually incomplete and may be incorrect. Such devices as job manuals or standard practice instructions, planned training courses, job rotation, and systematic reviews by supervision will usually ensure adequate instruction and training for old as well as new employees.

A technique used to advantage by some companies to develop good accounting staffs is a system of regular planned interviews with each employee by his

supervisor and, in the case of larger organizations, by a representative of the personnel department as well. The knowledge by employees that their positions and progress in the organization are objectively reviewed on a regular basis acts as a healthy stimulus to good work. Also such regular discussions provide opportunities for employees to discuss their problems with their supervisors without having to ask for special interviews. When a plan of this type is followed the interviews usually take place at least once annually but seldom more frequently than every six months.

Although it often seems to be the most neglected aspect in many companies there can be little doubt of the importance of good organization in an effective accounting system. Authorities on the subject are unanimous in the belief that no accounting system can be truly effective without observance of sound principles of organization.

Procedures

A procedure can be defined as a plan of operation to carry out one or more purposes while a method is defined as the way in which a procedure or a section of a procedure is performed. For example, the preparation of voucher cheques by means of a bookkeeping machine is a method used in an accounts payable procedure. It has been said that the timely, economical and effective development and presentation of financial information, which is the key to the interpretive purpose of an accounting system, is dependent to a very large extent upon sound and efficient procedures and methods.

In appraising a procedure the first point to receive attention is the basic design which includes the clerical operations performed and the forms and equipment in use. It is necessary to establish clearly the purposes of the procedure, since it is often found that secondary purposes can

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be developed as a by-product of a main operation which will result in worthwhile savings in clerical cost. Flow charts are useful devices for studying the form routing and handling in a procedure. A procedure depicted by relatively straight lines on a flow chart is more effective as a general rule than one with criss-cross lines. Careful scheduling of the various operations is necessary, of course, to secure smooth and efficient execution of the procedure.

When the procedure as a whole has been studied the next step is to consider the effectiveness of the methods. The alternative methods for such operations as communicating, recording, adding, calculating, sorting, despatching and filing are very numerous, and detailed study of the requirements coupled with knowledge and experience of available methods are needed to decide which is the best to serve a particular purpose. Occasionally important and even spectacular economies can be achieved through the substitution of efficient for obsolete accounting and clerical methods but it is of no avail to introduce efficient methods for the carrying out of a procedure which should itself be eliminated. Accordingly good judgment and perspective are essential in this phase of a systems appraisal.

By far the greatest volume of clerical work in every company is related in some way to forms, which may be regarded for practical purposes as synonymous with records. Therefore poor design and handling of forms can be a major source

of hidden and unnecessary expense. Deciding on the suitability of the forms used in any accounting system is almost a study in itself and naturally is a very important part of a review of procedures. Many companies have achieved impressive annual savings by instituting a "forms control" program and using sound methods of continuous appraisal of the usefulness and design of all forms.

Still another important aspect of modern accounting procedures is the number and variety of mechanical devices for office use. These have now reached such proportions that it is almost a full time task to keep abreast of new developments. Mechanical devices are, of course, only means of reducing effort and expediting results, and are not of themselves a guarantee of effective procedures or even efficient methods. In practice it is often found that much emphasis is placed on maintaining mechanical equipment in good order but little attention is directed to ensuring that the procedures for which the equipment is used are maintained in equally good condition. Normally the equipment salesman feels that his responsibility is discharged when the equipment has been installed and is operating properly. He rightly believes that the prime responsibility for the continuing maintenance and supervision of the procedure rests with the accounting officials of the customer concern who, it must be said, do not always give evidence of fully sharing this view.

The effective operation of accounting procedures and methods is greatly aided by good working conditions. Overcrowding, excessive noise, insufficient light, bad ventilation, and obsolete office equipment are not conducive to efficient operations. Proper planning and use of available space can sometimes yield surprising results. Lack of modern equipment or its use under unfavorable conditions is short-sighted economy. Although it sometimes seems that the accounting organization is treated as a poor relation of sales and production the more progressive companies have realized the contribution which effective accounting can make to management and are being guided accordingly in providing satisfactory working space and facilities for their accounting staffs. With the increasing complexity of modern business, continually greater reliance must be placed on effective financial and accounting services, but a good job cannot be accomplished without good tools.

Control

The Committee on Auditing Procedure of The American Institute of Accountants has recently issued a bulletin on internal control which gives the following definition:

> Internal Control comprises the plan of organization and all of the co-ordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency, and encourage adherence to prescribed managerial policies.

Internal control in its widest sense embraces a series of related controls which form an integral part of an effective accounting system. Of these probably the most widely publicized are internal check and internal audit. Internal check is defined in its simplest terms as the system whereby no one individual has complete control of all phases of a transaction. It is relatively easy to incorporate internal check in a procedure but without adequate control of procedures it is difficult to ensure that it is operating as intended. If followed out properly, the systematic control of procedures can be a strong protection against the development of flaws which may undermine the whole system of internal control. Up-to-date procedure manuals and well-defined arrangements pertaining

to authorized changes are effective means of control which are often neglected in the average company.

Most accounting executives are prepared to listen politely to suggestions for improving internal control in their organizations but are less frequently prepared to sanction their adoption. Sometimes this attitude may reflect unjustified confidence in the existing systems but at other times it may be justified scepticism as to the practicability of proposed improvements. A fair evaluation of the risk in relation to the cost of the protection will usually secure adherence to the spirit of sound internal control without impairing observance of the letter to any important degree. Detailed study of a procedure will often reveal opportunities not only to improve internal check but also to effect important economies. Recommendations developed in this spirit will undoubtedly receive greater attention from executive accountants and from management and have a much better chance of adoption.

Another important phase of business control regarded as essential in a truly effective accounting system is budgetary control. Although long accepted as a great management tool it does not yet seem to be widely used in Canada. The difficulties of managing modern enterprises successfully have been somewhat obscured during the past ten years as a result of the generally high profit levels which have prevailed during this period. Also during the war years budgetary control was regarded by some companies as dispensable in view of the preponderant importance of production. With a general levelling off, or even a recession of profits in some industries, currently in prospect there should now be a sharp revival of management interest in budgetary control. The absence of budgetary control in some companies is attributable, of course, to the absence of adequate financial reporting systems. Periodic financial statements and reports, which in turn are largely dependent upon a well designed chart of accounts and accounting manual, are an essential base for the introduction of a budgetary control system.

When interpretive accounting is preoccupied with past and current results the accounting organization falls far short of its maximum potential service to management. The successful operation of budgetary control depends on the understanding and support of management but accountants must promote such understanding. Even the application of budgetary control principles to accounting department expenses may serve as a useful demonstration of the advantages to be derived from extending the system to all phases of operations.

In fulfilling the interpretive purpose of the accounting system, budgetary control is generally held to be one of the best means of discharging this responsibility to management.

Reporting

Timeliness is the first characteristic of a good financial reporting system. Although it is unwise to generalize as to the proper time of release for financial reports and statements, it may safely be said that the value of a report or statement varies inversely with the length of time between the occurrence of the facts and the receipt of the relative information by the management.

Form and content of financial statements and reports are of course the foundation of the financial reporting system. Clarity and simplicity are vital attributes of effective reports to management. A good rule is to show only simply worded captions and key figures on the income and surplus statement and the balance sheet, and to support these statements with other exhibits giving details of the

condensed figures appearing on the first two statements. Some companies have emphasized working capital position in balance sheets by adopting the columnar or narrative form of presentation for their internal statements and even for their published accounts.

Intelligent use of significant ratios and comparisons is important if reader interest in financial data is to be held. A financial statement which shows only the current results or position is of limited value. Comparisons of actual results with budget forecasts are especially interesting to management. The attractive presentation of financial data adds greatly to the reception which they are accorded by management and one of the many types of efficient reproducing processes available is useful to this end.

Still other essential features of a good financial reporting system are interpretive reports and charts which show results in graphic form. The accounting officials should furnish written explanations and analyses of significant facts and variances depicted in the financial statements if maximum value is to be derived from the financial reporting system.

Accounting systems which do not provide management with financial reports and statements along these lines monthly or at least quarterly can hardly be regarded as serving management effectively.

Development

Development of a system implies a program of new construction or reconstruction rather than the ordinary maintenance of something now existing. In referring to the development of an effective accounting system it is assumed either that no system is in use, as would be the case in a new enterprise, or that there are serious known or suspected deficiencies to be corrected in the present system. When the general or accounting management of a company decides that a systems development program is to be undertaken a number of factors must be taken into account.

The first consideration is whether the program should be carried out by the company's own accounting staff or by an outside agency or whether a plan should be evolved to use both together. In support of fully internal methods programs, assuming that competent staff is available, it may be said that they ensure the desirable result of having company personnel completely familiar with all aspects of proposed and implemented revisions. Also, although it may take longer to achieve results, it is probably less expensive than using outside help. On the other hand, an outside consultant will, in most cases, have a more objective and independent approach and should also be able to apply a wider knowledge of general practice and specialized techniques and information. The most widely favoured and usually the most successful plan is a joint undertaking involving close collaboration between outside consultants and the company's own staff, particularly in the design and installation of new procedures.

If the development program is to be undertaken without the assistance of outside consultants it is necessary at the outset to decide whether it should be carried forward entirely by staff with existing regular duties or whether one or more employees should be assigned specially to the task under the guidance of a senior accounting official. For several reasons opinion generally seems to favour the latter course. Mention is made in the "Office Management Handbook" edited by Dr. Coleman Maze of one writer who contends that any organization employing as few as 20 people in a clerical capacity can afford the services of a full time systems man on the staff. In practice it is usually found that a major systems development program

throws too great a burden on supervisory staff along with their regular duties to achieve the best results. Furthermore supervisors may be too close to the activities for which they are responsible to view them in a critical and impartial manner. Accordingly the most satisfactory plan for undertaking an internal systems development program is to assign the responsibility to a carefully selected employee and, if the scope of the work warrants it, to provide him with one or more capable assistants. It is very necessary for a systems unit of this type to work in the closest collaboration with the regular accounting supervisors. It is most desirable that the full agreement of the supervisor concerned should be secured in advance of the introduction of a change in procedures or methods. In this connection it is unusual, and generally undesirable, for a systems and methods staff to be given the authority to make changes in existing procedures without higher approval.

In considering the assignment of staff to systems and methods work, questions frequently asked, particularly in Canada, are where such men can be found and what qualifications they should possess. Owing to the relatively recent development of accounting systems and methods work as a specialized function in this country, trained systems and methods men have not yet become numerous. The plan, which, of necessity, has been adopted by a number of companies is to select from their present staff an employee who appears to have a flair for such work and provide him with adequate authority and facilities to develop a program. The qualifications for systems and methods work have been set forth by two American writers, Professor J. B. Heckert and W. R. Thompson, in substantially similar terms in their respective books on systems design and installation. Among the qualities which they mention as important for a systems accountant are: a thorough knowledge of accounting principles and practice as applied in industrial organizations; the ability to analyze and plan; a sound grasp of organization principles as applied to people and work; perseverance with tact; the faculty of clearly expressing ideas both in writing and verbally; and the willingness to work hard. Further reference will be made to internal systems and methods units in discussing the maintenance of accounting systems later in this article.

In considering the employment of an outside systems and methods organization for assistance in a development program, company officials must assure themselves before any work is started that the agency whose services are contemplated has a record of integrity and successful accomplishment. When a systems consultant is employed it is usual for him to make a survey of the existing accounting organization, procedures, and methods to ascertain deficiencies and formulate recommendations for the necessary revisions. During a survey the assistance given by the company's staff to the consultant may consist largely of supplying required information. When the results of the survey have been communicated to the management and a decision has been made concerning the proposed revisions more extensive collaboration by the company's staff in the design and installation of new procedures is necessary. The most satisfactory arrangement is for the assignment of one or more company employees to work on a full time basis with the consultant. The individuals selected for this assignment may later comprise the internal systems and methods unit when such a function has not hitherto been established in the company. An important advantage of close collaboration between the consultant and company employees is that it provides the latter with an opportunity to become

thoroughly familiar with the details of planned new procedures and methods. From the consultant's standpoint, many useful and practical suggestions often originate with company employees. The use of company staff to the maximum practical extent also enables more effective and economical use to be made of the consultant's services. By the time the procedures are ready to be installed it happens frequently in practice that the company's staff is able to take full charge of the work of installation and the consultant's further services can be confined to guidance and advice.

To secure the best results from a comprehensive program of systems improvement it is essential that the support of the management and the accounting officials be assured throughout the undertaking. Sometimes the pressing urgency of current problems makes it difficult for the responsible officials to devote adequate time to the general direction of a methods program. A sound plan to make the most effective use of the time of company officials in connection with a systems development program and to ensure coordination in considering, planning, and implementing changes, is the creation of a systems committee. When outside consultants are employed it is customary that they be represented on this committee along with senior accounting officials. In practice it is desirable that a systems committee be restricted to a workable size. Usually the treasurer and the comptroller or the officials performing these functions together with one or two representatives of the consulting firm constitute a satisfactory committee. If an individual has been selected to head up the internal systems unit he should act as secretary of the committee. Arrangements can be made for various supervisors concerned with particular procedures under review by the committee to attend meetings from time to time as required.

Regardless of the particular means which may be selected to inaugurate and carry forward a program of systems improvement, few enterprises can fail to benefit from a critical and constructive appraisal of their accounting organization, procedures, and methods.

Maintenance

When an intensive program of major system improvements has been successfully concluded there is often a tendency for the attention and the effort which it has generated to be terminated also. Unfortunately a modern accounting system is like a complicated machine: if one vital part breaks down the whole machine may be put out of commission. In some manufacturing operations it is necessary to employ maintenance men for the sole purpose of preventing machine breakdowns and consequent loss of production. The same is true of an accounting system, with the maintenance being performed by internal auditors and by systems men, the functions of which are related but by no means identical.

Reference has been made earlier to the advantages of assigning one or more employees to the full-time task of systems and methods work in accounting organizations. Many companies in the United States and some of the larger enterprises in Canada have successfully utilized the services of internal systems and methods departments for many years. Few of the medium sized and smaller companies in Canada, however, seem yet to have accepted the maintenance of accounting procedures and methods as an important and necessary staff function. Encouraging signs are in evidence, however, of wider adoption of this small but vital unit of a soundly planned and efficiently operated accounting organization.

Among the more common tasks assumed by a systems and methods unit in the accounting organization are the estab-

lishment and operation of a forms control program; the maintenance of organization and accounting procedure manuals; continuous study of existing systems; and special assignments to develop new procedures to meet changing conditions. While the economies that can be achieved by an effective systems and methods staff, even through a good forms control program alone, are usually an important result of their activities, the continued existence of the unit should not be made contingent on this one factor. Some of the other contributions of a systems unit may be less tangible but more important, as, for example, in the effective control of procedures.

In view of the constant stream of new ideas and methods it is of the utmost importance that the systems and methods unit be provided with adequate facilities to keep abreast of developments. Memberships in the various associations devoted to the study and advancement of systems and methods are useful to this end. Also a well-developed library of reference material including selected accounting magazines provides a fruitful source of practical information. Even without the existence of specially assigned systems and methods staff, every accounting organization should provide a good accounting library for the use of its employees.

Apart from the steps which can be taken internally to promote the effective maintenance of accounting systems there is increasing demand for special reviews of accounting procedures to be made periodically by outside agencies which are often the public accounting firms responsible for auditing the accounts. Such reviews are concerned not only with the system of internal control but also with the efficiency of the methods in use. With the steadily growing emphasis on so-called "balance sheet" audits public accountants sometimes feel that they have inadequate opportunities to study the general effectiveness of their clients' accounting procedures. As a result such special periodic reviews to evaluate by critical analysis the adequacy of existing procedures and methods have provided fruitful results in many cases.

Possibly the most successful way to maintain the accounting procedures in smooth and efficient operation is to combine the services of internal and systems and methods staffs with periodic "procedure audits" by outside agencies.

Conclusion

To develop more effective accounting systems is probably a desire of most industrial and professional accountants. Constructive and positive action in gratifying this desire must, however, for many accountants, be subordinated to the pressing necessity of getting on with the job of administering the accounting organization or auditing the accounts. Few of us, surely, can state with conviction that no improvements are possible in the accounting systems with which we are immediately concerned. Two thoughts may help us to convert wishful thinking into action:

The first is to consider the cost of one unnecessary clerical job in relation to the sales and production effort put forth in providing the money to pay for the job. If the annual cost of an ordinary clerical job including supervision and office facilities is estimated at even as low as $3,000, it would be equivalent in many companies to the net profit on sales amounting to $25,000 or more. Surely, this is not an unimportant consideration in even the largest and most profitable enterprise. The second thought which may serve as a stimulus to action is that the dollar savings resulting from a sustained methods improvement program may be large enough within a year or two of its establishment to pay for its continued existence for the rest of

the company's life. From the standpoint of the enterprise as a whole it can truly be said that the dollars saved by the accounting department, either by more effective advice and service to management or by economies in the cost of recording transactions, are dollars earned for the business.

To sum up, the essential characteristics of an effective accounting system comprise good organization, efficient procedures, adequate control, and intelligent reporting, integrated so as to serve management effectively, record transactions accurately, and protect assets competently.

Current Reading

By R. F. Bruce Taylor, F.C.A.

Labour Relations and Longevity

WE WERE STRUCK by the following remarks which appeared in the annual report of the Canadian Pacific Railway Company. No attempt is made by us to point a moral, in fact the information given is not sufficient to enable us even to discuss the matter. The facts given appeared to us, however, to be most interesting.

After stating that at the end of 1948 there were 9,636 persons on the pension payroll of the Company, the following distribution by age groups is set out:

Under 60 years of age	439
From 60 to 64 years of age, inclusive	1192
From 65 to 69 years of age, inclusive	4594
From 70 to 74 years of age, inclusive	2101
From 75 to 79 years of age, inclusive	850
From 80 to 84 years of age, inclusive	345
From 85 to 89 years of age, inclusive	90
90 years and over	25
	9636

Then, at the conclusion of the report in expressing appreciation for the efficient service rendered by officers and employees, the statement is made that 2 out of every 5 of the employees of the Company have been in its service for 20 years or more.

Extraneous Material

FROM "News of the Branches of the Chartered Institute of Secretaries" as reported in *The Secretary*, March 1949,—

> West Yorkshire — On 25th October, Mr. R. B. Dawson, M.Sc., F.L.S., Director of St. Ives Research Station, Bingley, addressed a well-attended meeting of members of the Branch and of the Students' Society on "Twenty Years of Greenkeeping Research".

This writer would be glad to take on a chartered accountants' students' association on "The Rules of the Road at Sea". One goes farther sailing than at the other game!

Succession Duties in Canada

Published by Crown Trust Company

THIS booklet summarizes succession duties as they are imposed in Canada, whether in Ontario or Quebec where duplicate taxation and collection remains or in the other provinces where, by reason of agreements with the Dominion government, only the Dominion authority levies and collects the tax. Copies are available without charge at any office of the trust company.

Replacement Accounting

By R. P. Egerton, C.A.

A suggested accounting device for meeting the problem posed by changing replacement costs

Industry's View of Depreciation Accounting

ONE NEED NOT read many financial journals to find out that what is causing industry more unhappiness than anything else at the present time is the fact that, when replacements of plant and equipment must be made, not enough money has been accumulated to meet the present costs of these replacements. If it is agreed that national prosperity is dependent to a great degree on the continuation in business of established concerns, the ability to replace worn out plant and equipment when this becomes necessary is of vital importance. That this has not been possible in recent years without making drastic appropriations from surplus is the fault, industry claims, of the accounting system at present being used.

One particular weakness in the present system, it is said, is that financial statements do not reflect changes in the value of the dollar. Did this idea originate in the minds of accountants in defence of the present system and in explanation of the present lack of replacement dollars? It has been seized upon by financial papers as being of great moment. But to this road there is no ending.

Is the System at Fault?

The only accounting device in regular use which might lead to the accumulation of replacement money is that known as "depreciation". Whatever may be the latest definition of this word, it was undoubtedly clothed in the past with the meaning of a loss or "diminution in service or physical value of an asset caused by wear and tear, etc." (*Accounting Terminology*). It is on this premise of something being used up for the purpose of earning income that deductions are allowed from the income for tax purposes. A more recent definition has been given as "amortization of cost" and another which postulates that it is an orderly allocation of the cost of assets. These dissociate the device from any attempt to measure diminution in value. "Amortize" is used in its sense of "extinguish".

In none of these definitions is there any indication that depreciation ever had any connection with replacements. In fact the more definitions that appear, the more it seems that depreciation was never intended to cover replacements. It is true that depreciation is a non-cash item of costs and thus makes money available, and also that there

R. P. Egerton was born in India and educated, first in England, and later in Canada. He studied electrical engineering at McGill, but before graduating joined Molson's Bank, where he was employed for 5 years less his period of war service with the Canadian Black Watch in the first war. Entering the profession of accountancy, he was with Price, Waterhouse in Montreal for 11 years, Treasurer of E. B. Eddy Co. for 10 years, cost accountant for the Dominion Treasury and later was with Canadian Vickers Ltd. in Montreal during the last war. He then served with the Ontario Royal Commission on Forestry for a year and a half. Mr. Egerton is now with the Canadian Lumbermen's Association in Ottawa.

is nothing to prevent the setting aside of this money for replacement purposes. However, in general, accountants have not insisted that this be done. And even had this been universally insisted upon, there would be insufficient money in the fund to meet rising replacement costs. In general accountants, the income tax authorities and the accounting system have not made any provision for the impact of rising replacement costs on industry.

The Problem of Replacements

The problem of replacements is surely of sufficient importance to merit individual attention. Let us not allow it to become involved with valuations of assets nor with the revision of balance sheets in accordance with fluctuations in the value of the dollar. What is required is some device which will lead to replacement money being available when needed.

What is Capital Cost?

The device of depreciation has tended to lay emphasis on the past. Thus there must be a change in the concept of "the capital cost to the taxpayer". The true capital cost is the amount required to fulfil the obligation to replace a capital asset by reason of its use to-day. The plant and equipment in use to-day has been bought and paid for. The transaction is complete and, unless it is known that it is not to be replaced, what it cost is a thing of the past. What matters is the amount of the future liability being incurred because of using up the assets.

Replacement Accounting

To take the place of depreciation, however it may have been defined in the past or may be defined now, what is needed is replacement accounting which will involve replacement costs, replacement funds and replacement reserves. The function of replacement accounting is to record steps taken "to provide for the gradual extinction of a future obligation by periodical contributions to a fund adequate to make a replacement when it becomes necessary". (It so happens that this definition is the kernel of Webster's definition of "amortize". Notice the words "future obligation" and the confusion resulting from defining depreciation as amortization of cost. If the depreciation device had been used to amortize (Webster) the asset, all would have been well). Thus in replacement accounting the charges to operations and credits to reserves reflect the transfer of money from current account to replacement fund. If there is no transfer of money the other entries are not made.

Estimated Replacement Costs

It is not humanly possible to foretell what replacement costs will be 10, or

even 5, years after the time of the purchase of equipment. The Dominion Bureau of Statistics, however, publishes indexes which should be acceptable to the income tax authorities and which can be used to produce results which will more nearly approximate actual replacement costs than any device at present in general use.

The Dominion Bureau of Statistics does not publish indexes for machinery and equipment. For the purpose of the examples shown in Tables 1 and 2 the indexes for iron and its products, non-ferrous metals and their products and of wage rates in the manufacturing industry have been weighted and combined. The indexes are on the basis 1926 = 100 and it so happens that 1938 = 100 also. Each annual provision includes an adjustment of all previous amounts provided.

Rising Replacement Costs

TABLE 1

Estimated 10-year life equipment; additions in 1937
Index conversion factor — 100

Year	Combined Index	Annual provision per $100 of original cost	Accumulated Provisions
1938	100.0	$10.00	
1939	98.1	9.62	$ 19.62
1940	105.0	10.88	31.50
1941	113.5	13.92	45.42
1942	120.2	14.68	60.10
1943	127.4	16.54	76.64
1944	130.2	14.50	91.14
1945	133.1	15.34	106.48
1946	145.8	24.74	131.22
1947	167.8	36.58	167.80

In this particular example, the greatest increase in the indexes is in the last periods and the provision includes adjustments to previous provisions. Even so, the final year's provision amounts to $36.58 per $100 — tax free if replacement accounting is adopted—compared with $77.80 per $100 which would be required using the depreciation system of which $67.80 would have to be provided from profits remaining after income tax. Furthermore, in practice the amount of the final provision according to replacement accounting would be reduced by a proportion of the earnings of the replacement fund.

The table gives some indication of the amounts under-allowed as deductions from taxable income and the amounts by which profits have been over-stated.

Falling Replacement Costs

Table 2 has been prepared to show the effect of falling Replacement Costs. The indexes used in Table 1 have been converted to the basis 1947 = 100.

TABLE 2

Estimated 10-year life equipment; additions in 1946
Index conversion factor — 167.8

Year	Combined Index	Annual provision per $100 of original cost	Accumulated Provisions
1947	100.0	$10.00	
1948	86.7	7.35	$17.35
1949	79.2	6.41	23.76
1950	77.5	7.23	30.99
1951	75.8	6.91	37.90
1952	71.5	5.02	42.92
1953	67.4	4.19	47.11
1954	62.4	2.82	49.93
1955	58.4	2.61	52.54
1956	59.5	6.96	59.50

This shows the other side of the picture. Only $59.50 per $100 has been provided with which to replace what originally cost $100. The percentage on cost allowed as deductions from taxable income falls as low as 2.61 in 1955. But if this is all that is required, why provide more?

The unfortunate part of such a drop in indexes in the future is that industry cannot recover what has been lost through being over-taxed in the past. However, if industry considers that the replacement problem is vital to its prosperity it would be well worth taking the loss in order to have the income tax authorities accept the revised definition of "capital cost". Furthermore a wholesale reduction in allowances should result in a reduction in the income tax rate.

Conclusion

This, in its simplest form, is an alternative to the depreciation device. It involves abiding by the Dominion Bureau of Statistics indexes in order to determine how much tax free money may be set aside each year, no matter what the replacements actually cost. It would involve reductions in the rates of the allowances now in force whenever the Dominion Bureau of Statistics indexes showed falling costs. It involves the obligation to set money aside in order to claim the provisions for replacements as deductions from income for tax purposes. It is based on the assumption that industries normally continue in business when the original plant and equipment becomes worn out; the depreciation device is based on the assumption that they will either fold up at this stage or else that a fresh start must be made. Replacement accounting tends towards providing for replacements by means of establishing an accounting device for this purpose rather than leaving the problem to be solved by management policy; it is moving forward facing the direction of travel rather than walking backwards with eyes glued on the past.

The Current Depreciation Mirage

By John N. Myer, M.S.

The view that the charge for depreciation adds to working capital is an economic mirage

A STOCKHOLDER in one of our large corporations recently came to the writer for an explanation of a summary included in the corporation's annual report. This summary, which analyzed the increase in working capital, was like this:

Additions to Working Capital:		
Net profit	$156,384	
Depreciation	25,000	
Issue of additional capital stock	100,000	
Total additions		$281,384
Deductions from Working Capital:		
Additions to plant and equipment	$185,500	
Redemption of bonds	50,000	
Dividends	30,000	
Total deductions		265,500
Increase in working capital		$ 15,884

The corporation's income statement was displayed on another page of the report. In condensed form, its showing was in the following manner:

Sales		$850,625
Cost of goods sold		305,156
		$545,469
Depreciation	$ 25,000	
Other expenses (including federal income tax)	364,085	389,085
Net profit carried to surplus		$156,384

The stockholder stated that the summary of the change in working capital was quite clear to him except for one item: depreciation. He could not understand how depreciation causes an addition to working capital. The explanation given by the writer was that while the figures in the summary were correct and quite understandable to the trained accountant, they were obviously misleading to one not well versed in accounting.

Clarification

In order to clarify the matter the writer proceeded to recast the summary into the following form:

Additions to Working Capital:

Sales	$850,625	
Issue of additional capital stock	100,000	
Total additions		$950,625

Deductions from Working Capital:

Cost of goods sold	$305,156	
Expenses (including federal income tax)	364,085	
Additions to plant and equipment	185,500	
Redemption of bonds	50,000	
Dividends	30,000	
Total deductions		934,741
Increase in working capital		$ 15,884

The reader will notice that this revised form differs from the original in that in place of the net profit, three components of this item, — namely, sales, cost of goods sold, and expenses — are shown; also that the fourth — depreciation — has been omitted.

The net profit is the net of various items; some of them increase the working capital, others decrease it, while still others do not affect it at all. Therefore, the statement accounting for the increase in working capital is more understandable when the components of the net profit that affect the working capital are shown and classified according to whether they increase or decrease it and those that do not affect the working capital are omitted. Thus the revised form of the statement shows that one of the components of the net profit, sales, increased the working capital (in the form of cash and receivables) and that two of the components, cost of goods sold and expenses, decreased the working capital (by increases in accounts payable and decreases in cash). The depreciation has been omitted because it did not affect the working capital (it caused no increase or decrease in the current assets or current liabilities).

The original form of the summary shows additions to working capital:

Net Profit	$156,384
Depreciation	25,000
	$181,384

The total is the addition to working capital through operations. Since the depreciation was deducted from the income in computing the net profit and as it did not affect the working capital it is added back in order to arrive at the addition to working capital through operations.

In the writer's form of analysis the increase is computed in the following manner:

Sales		$850,625
Cost of goods sold	$305,156	
Expenses	364,085	669,241
		$181,384

In order to show more clearly the addition to working capital through the operation of the business the following arrangement of the working capital summary might be made:

Addition to Working Capital Through Operations:

Sales	$850,625	
Cost of goods sold	305,156	
	$545,469	
Expenses	364,085	
Addition through operations		$181,384

Other Additions to Working Capital:

Issue of additional capital stock		100,000
Total additions		$281,384

Deductions from Working Capital:		
Additions to plant and equipment	$185,500	
Redemption of bonds	50,000	
Dividends	30,000	
Total deductions		265,500
Increase in working capital		$ 15,884

Recovery of Costs and Expenses

Various economists have given an explanation of variation in working capital which coincides with the first form of the working capital summary presented above. They have reasoned that when a business has made a profit the gross income consists of three elements: (1) recovery of expenditures during the period* for cost of goods sold and for expenses; (2) recovery of expenditures in prior periods* applicable to the current period (depreciation); and (3) net profit. Thus, in the illustrative case above, the gross income from sales, $850,625, according to this analysis would be divided into (1) recovery of expenditures during the period for cost of goods sold and expenses, $669,241; (2) depreciation, $25,000; and (3) net profit, $156,384. Of these, (2) depreciation plus (3) net profit caused an increase in working capital through operations of $181,384.

From the writer's version of the working capital summary, the analysis of the gross income from sales, $850,625, divides itself into two categories: (1) recovery of expenditures for cost of goods sold and expenses, $669,241; and (2) excess of gross income over cost of goods sold and expenses, $181,384, which resulted in an increase in working capital through operations of $181,384. The reader will notice that there is no subdivision here of the increase in working capital into net profit and depreciation. The depreciation charge is completely ignored.

*In the main.

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Now it might be said that there is here a distinction without a difference; both analyses arrive at the same conclusion: that the working capital increased $181,384 but in one analysis this figure is divided into two components and in the other it is not so subdivided. The writer agrees that it is quite all right to analyze the increase in working capital into two parts as has been done. But unfortunately this procedure has led to a serious error which permeates the discussion of the contemporary economic problem of the replacement of fixed assets.

Depreciation as a Source of Funds

At the present time the replacement of fixed assets presents a great problem because of the rise in the price level. Management needs more funds with which to make additions to and replacements of plant and equipment than it formerly did. And so economists have set themselves to the task of finding ways and means to aid management. These economists, following the reasoning of the first form of the working capital analysis above, have concluded that since depreciation causes an addition to working capital the way to get a greater increase in working capital is to increase the rate of depreciation. The fallacy in this reasoning will become evident if the

depreciation in the illustrative case is varied.

Suppose the depreciation charge should be $30,000 instead of $25,000. Then the stated net profit would be $151,384. And adding the depreciation, $30,000, to the net profit, $151,384, would yield an increase in working capital through operations of $181,384 — the same as when the depreciation charge was only $25,000. The increase in the depreciation is offset by the decrease in the net profit. If, on the other hand, no depreciation had been recorded the net profit would be $181,384, which is the increase in working capital.

It is thus seen that the increase or decrease of the depreciation charge has no effect on the working capital and so is not a source of funds or working capital as alleged. The doctrine that depreciation through recovery of past expenditures produces funds with which to purchase new assets is an economic mirage. It has its origin in the utilization of the net profit figure as the starting point for measuring the variation in working capital. A business, however, does not get cash from net profit. Net profit is merely a bookkeeping concept: the difference between income and expense. The business gets cash through sales. Therefore, the sales figure must be used as the starting point for measuring the variation in working capital. There will be no solution to the managerial problem of replacement of fixed assets until the notion that depreciation is a source of funds is eliminated.

PROFESSIONAL NOTES

ONTARIO

Messrs. S. E. Harper, C.A., and W. S. Tory, C.A., announce the formation of a partnership for the practice of their profession under the name of Harper & Tory, Chartered Accountants, with offices at Bank of Commerce Bldg., St. Catharines.

* * * *

Mr. M. E. Duckman, C.A., announces the removal of his offices to 422 Federal Bldg., 85 Richmond St. W., Toronto.

* * * *

Charles T. Sears & Co., Chartered Accountants, announce the opening of an office at 197 Christina St. N., Sarnia, with Mr. R. G. Woods, C.A., as resident partner.

* * * *

The Chartered Accountants' Club of Ottawa

At the luncheon meeting at the Chateau Laurier on May 11, 1949, a highly interesting and informative address was delivered by Mr. J. Grant Glassco, O.B.E., F.C.A., President of the Institute of Chartered Accountants of Ontario. Among the matters discussed were reciprocal arrangements between Provincial Institutes, training of students and relationships with other accountants' organizations. Mr. T. V. Burke, President of the Quebec Institute, also spoke on the friendly relationships between that Institute and the Club. Mr. Jas. Ross presided.

QUEBEC

C. N. Knowles & Co., Chartered Accountants, announce the removal of their offices to Suite 703-4, Bank of Nova Scotia Bldg., 437 St. James St. W., Montreal.

* * * *

Mr. Louis A. Kravitz, B.Com., C.A., announces that his office is now located at Suite 134, Coristine Bldg., 410 St. Nicholas St., Montreal.

* * * *

Arbess, Benjamin, Small & Co., Chartered Accountants, announce the removal of their offices to Suite 501, The New Phillips Square Bldg., Montreal.

OBITUARIES

The Late Ian Peter McIntosh Robertson

The Institute of Chartered Accountants of Ontario announces with deep regret the death of Ian Peter McIntosh Robertson in his 63rd year.

Born in Scotland, Mr. Robertson was admitted to membership in the Society of Accountants in Edinburgh in 1911. After coming to Canada, he became a member of the Ontario Institute in 1913 and in 1924 he was made a fellow of the Institute. In his professional life he was an active partner in the firm of Neff, Robertson & Company, Chartered Accountants, later Neff, Robertson & Stone, Chartered Accountants.

To his widow and children the members of the Institute extend sincere sympathy in their great loss.

The Late John Waugh Cringan

The Institute of Chartered Accountants of Ontario regrets to announce the death of John Waugh Cringan in his 64th year.

Born in Scotland, Mr. Cringan came to Canada as a child and received his education in Toronto. He was admitted to membership in the Ontario Institute in 1910 and was for many years auditor for Canada Packers Ltd.

Keenly interested in music, Mr. Cringan organized a choral society in Toronto which has produced a number of operettas and also for some time he played the viola with the Toronto Symphony Orchestra.

He was a member of the Canadian Institute of International Affairs, the Royal Canadian Yacht Club, and St. Andrew's Society.

To his widow, daughter and sons the members of the Institute offer their sincere sympathy in their great loss.

The Late James Neilson

The Institute of Chartered Accountants of Saskatchewan announces with deep regret the death of James Neilson in his 79th year.

Born at Millbank, Ontario, Mr. Neilson was commercial instructor at Windsor Collegiate for ten years. In 1909 he moved to Saskatoon and joined the staff of Nutana Collegiate. In 1914 he was made bursar of the University of Saskatchewan and in the following year professor of accounting. He was appointed dean of accounting in 1936, and remained in this position until his retirement in 1941.

Mr. Neilson was admitted to membership in the Saskatchewan Institute in 1912 and in 1915 was appointed a Fellow of the Institute. He served a term as president of the Institute. In 1940 he was given a life membership.

To his widow, son, brothers and sister, the members of the Institute offer their sincere sympathy.

The Late Ernest Bolton McLeod

The Institute of Chartered Accountants of Ontario announces with deep regret the death of Ernest Bolton McLeod in his 37th year.

Admitted to membership in the Ontario Institute in 1942, Mr. McLeod was associated with the firm of Clarkson, Gordon & Company, Chartered Accountants, in Toronto. During the war he was with the Dominion Government Purchasing Commission, Ottawa.

The members of the Institute extend to his widow and son their sincere sympathy in their bereavement.

The Students' Department

J. E. Smyth, C.A., Editor

NOTES AND COMMENTS

A SHORT TIME AGO our druggist had a sign pasted on his window, *"SAVE 71c!* Buy a large bottle of aspirins for 79c". We presume he means that if we bought the same quantity of aspirins from time to time in smaller containers, we would have to pay $1.50. We understand that the same type of appeal is also successful in the millinery business; that many a fair lady has been persuaded to buy some utterly superfluous creation on the grounds that she is "saving" a substantial sum by buying it at "half price".

Now for our own part we accept the above proposition with a couple grains of salt. The point is, should we call what is saved "revenue" or should we simply call the exact amount spent "expense" and let it go at that? We suspect that somewhere along the line in the development of accounting someone put a fast one over on us. They overemphasized the difference between trade or quantity discounts on the one hand and cash discounts on the other. This permitted them to place "cash discounts earned" outside the calculation of trading results as an item of "Financial revenue". The result is, we are all too afraid, that any student original enough to deduct "cash discounts earned" from "merchandise purchases" in computing "cost of goods sold" is likely to learn the folly of independent thinking on this particular point. But then, as students, we have all tried unsuccessfully at one time or another to change "accepted accounting principles" for better or for worse.

* * *

THE PROBLEM of cash discounts earned is mentioned by John G. Blocker in his article "Mismatching of Costs and Revenues" in the January 1949 issue of *The Accounting Review.* He writes, ". . . Income is not realized upon the initiation and receipt of a purchase nor through payment of an invoice. Furthermore, inventories are not carried at a proper cost valuation if purchases are booked at the invoice price and a cash discount is subsequently taken. There is no justification for recording inventories at an amount greater than their cash outlay. Clearly then, if cash discounts are not treated as a reduction in cost there will be a misstatement of inventory cost, inventory cost expirations in future accounting periods will be overstated, a mismatching of revenues and costs will result for both the present and the succeeding periods and the profit and loss statement will reflect inaccuracies."

At page 118 in *Advanced Accounting* Paton writes, "The best procedure in all cases is to accept the lowest price provided by the invoice as the cost of the goods. Net prices are substantially on a cash basis and therefore represent effective costs. It is the net price that the vendor generally expects to collect and the buyer expects to pay. Failure to accept all discounts offered, indeed, is evidence of careless management or precar-

ious financial condition. There is no excuse for the practice — unfortunately still common — of treating gross prices as genuine costs and purchase discounts as an item of income. *Realized income cannot arise through the operation of buying.*" (Italics are our own.)

SOLUTION TO LAST MONTH'S PUZZLE

Total points scored to February 11, 1949	285
Total points scored each Friday night	15
Number of nights bowled $\frac{285}{15}$	19
Number of teams in league	10
Number of nights to bowl one series	9
Number of series bowled to Feb. 11, 1949 $= \frac{19}{2} =$	2 plus 1 night
Number of nights to complete third series	8

The third series will therefore end eight weeks from February 11, 1949 or April 8, 1949. As it is evident that a fourth series would carry the league well into summer, this date marks the end of the season.

CORRESPONDENCE

Montreal, P. Quebec.

Sir: I am reproducing below an invitation to a "Smoker" of the Quebec Students' Society drawn up in the form of a certified balance sheet. The second item of assets is called "Dancing girls", but no basis of valuation (cost, market, last-in first-out) has been given.

I don't think that "Dancing girls" can be classified as assets, either current, fixed, or intangible, and I would prefer to classify the item as a "contingent liability".

The case should be referred to the Research Committee.

J. Pfeiffer, C.A.

THE CHARTERED ACCOUNTANTS STUDENTS' SOCIETY OF QUEBEC

Smoker

as at 12 May 1949 — 8 p.m.

Assets	*Liabilities*
ENTERTAINMENT FOR EVERYONE:	COST — $1.00
Sing-song	
Dancing Girls	
Other Attractions	
ONE FREE BEER	

TO THE MEMBERS:

We have examined the entertainment, and the one free beer, and wish to report that in our opinion the above mentioned "SMOKER" as at 12 May 1949 is drawn up so as to provide a maximum amount of enjoyment for a minimum of outlay.

Your Committee.

Philadelphia, U.S.A.

Sir: I have been looking forward rather curiously to the answer which would be provided in your journal for the idle capacity problem which was stated in the February issue. The March issue gave the answer with which I agree wholeheartedly. What puzzles me, however, is the method used in arriving at the answer. This sort of thing, I believe, can never be remembered long enough to be of value later on unless one solves these problems day after day. I am setting out below a method which I teach here and which, I have found, my students have learned and learned to use without fail.

I hope you do not mind this letter but I just wanted to present this idea to you. Perhaps it is of value.

ADOLPH MATZ
Assoc. Prof. of Accounting,
Wharton School of Finance and Commerce,
University of Pennsylvania.

First step:

Standard fixed factory service cost applicable to January production:

(1) To complete goods in process as of Jan. 1 20 units x 50% x $8	$ 80
(2) Further goods completed during January 130 units x $8	1,040
(3) Inventory of goods in process January 31 40 units x 60% x $8	192
	$ 1,312

Second step:

Computation of variances:

Actual expense	$1,580	
Budget (price variance) →		$20 — credit or favourable
Budgeted expense	$1,600	
Capacity variance $\frac{8,000 - 7,200}{8,000} \times 1,600$ →		$160 — debit or unfavourable
Actual hours x standard price (7,200 x .20)	$1,440	
Efficiency variance →		$128 — debit or unfavourable
Standard cost (see first step)	$1,312	

Third step:

Journal entry

Dr. Work-in-process Factory service	1,312	
Dr. Capacity variance	160	
Dr. Efficiency variance	128	
Cr. Budget (price) variance		20
Cr. Cash or vouchers payable or reserve account		1,580

Kingston, Ontario.

Sir: Having been quoted by Mr. Gray (Students' Department, May 1949) as an advocate of a balance sheet presentation which he regards as unsound I feel that I have an invitation to enter the fray.

I should like to ask Mr. Gray some questions. First, would he deny that the almost universal practice is to head one side of the balance sheet with the word "Assets"? If not, then how does he arrive at the conclusion that there is no implication that an item set down on that side of the balance sheet is an asset? Finally, if he should shift his stand and assert that unamortized bond discount is in fact an asset what is his concept of an asset?

Having been termed a reactionary by one reviewer of my book I find it consoling to be regarded by Mr. Gray as a revolutionary.

R. G. H. SMAILS

PROBLEMS AND SOLUTIONS

Solutions presented in this section are prepared by qualified accountants and reflect of course the personal views and opinions of the various contributors. They are designed not as models for submission to the examiner but rather as such discussion and explanation of the problem as will make its study of benefit to the student. Discussion of solutions presented is cordially invited.

PROBLEM 1

Intermediate Examination, November 1948

Accounting I, Question 4 (10 marks)

The following are the condensed trial balances of the Lylo Mattress Company Limited, as at 31st December 1946, and 31st December 1947.

Lylo Mattress Company Limited
CONDENSED TRIAL BALANCES
As at 31st December

Debits:	*1946*	*1947*
Cash	$ 500	$ 500
Bank	1,450	3,706
Accounts receivable	74,030	60,290
Inventories	66,340	43,870
Land	25,000	30,000
Buildings	60,000	86,000
Equipment	72,540	71,390
Investments — government bonds	6,000	7,000
Cost of goods sold	112,120	116,540
Selling expense	21,380	21,590
Administration and general expense	43,470	44,260
Bank interest and exchange	1,260	920
Deposit on equipment	....	30,000
	$484,090	$516,066

Credits	*1946*	*1947*
Accounts payable	$ 36,480	$ 35,320
Bank loan	8,000	....
Capital — 7% Preferred	50,000	50,000
— Common	100,000	100,000

Surplus	21,196	21,136
Sales	190,130	208,820
Sundry income	1,240	1,280
Reserve for bad debts	6,520	6,520
Reserve for depreciation on buildings	27,000	36,000
Reserve for depreciation on equipment	43,524	56,990
	$484,090	$516,066

Additional information is obtained as follows:

1. During 1947 the company purchased additional land at a cost of $5,000 and began constructing an addition to the building. This construction is still in process, and the cost of work completed at the end of the year is estimated to be $26,000.
2. In 1947, the company made a deposit on equipment which will be installed when the building is completed. The equipment will cost $70,000.
3. Equipment costing originally $1,150 and against which a depreciation reserve of $460 had been accumulated, was disposed of during 1947 for $990.
4. Dividends paid were as follows:

	1946	1947
Preferred	7%	7%
Common	5%	10%

Required:

Statement of source and application of funds only.

(Note: An analysis of the change in working capital is not required.)

SOLUTION

Lylo Mattress Company Limited

STATEMENT OF SOURCE AND APPLICATION OF FUNDS

For the year ended 31st December 1947

Funds were derived from:			
Profits	$26,790		
Add Depreciation provisions	22,926	$49,716	
Sale of equipment		990	
Total funds derived			$50,706
Funds were applied to:			
Purchase of land		$ 5,000	
Construction on buildings		26,000	
Deposit equipment		30,000	
Purchase of Government bonds		1,000	
Payment of dividend		13,500	
Total funds applied			75,500
Net decrease in working capital			$24,794

Editor's note: The purchase of government bonds might have been treated as an increase in working capital instead of an application of funds as above.

PROBLEM 2

Intermediate Examination, November 1948

Accounting I, Question 5 (10 marks)

On 30th September 1947, the following discrepancies existed in the inter-office accounts on the books of the K. C. Jones Company Limited and its branch office:

1. Head Office charged the branch with $980 for office furniture; the branch recorded the charge as $890.
2. The branch took up as $430 a credit by Head Office of $400 for merchandise allowance.
3. Head Office charged the branch $460 for interest on open account, which the branch set up incorrectly as $410.
4. A Head Office charge for labour of $367 was taken up twice by the branch.
5. Head Office charged the branch $695 for freight on merchandise which the branch entered as $69.50.
6. The branch sent Head Office a debit note for $310, representing its proportion of a bill for truck repairs; Head Office did not record the debit note.
7. Head Office received $530 from the sale of a truck, and in error credited the receipt to the branch; the branch did not charge Head Office for the amount.
8. On 10th October 1947, Head Office put through an entry correcting No. 7 above. The branch accidentally received a copy of this entry and put through a credit to Head Office as of 30th September 1947.

At 30th September 1947, the branch account on the Head Office books showed a debit balance of $134,520.

The inter-office accounts were in agreement at the beginning of the year.

Required:

(a) Journal entries to adjust the branch office books.
(b) Journal entries to adjust the Head Office books.
(c) Correct amount of the inter-office balance.
(d) Balance in the Head Office account on the branch books before adjustment.

SOLUTION

(a) **Branch Books**

ADJUSTING ENTRIES

1. Office furniture	$ 90.00	
Head Office		90.00
Correcting entry for furniture entered 890 should be 980		
2. Merchandise allowances	30.00	
Head Office		30.00
Correcting credit memo from Head Office of 400, entered as 430		
3. Interest	50.00	
Head Office		50.00
Revising incorrect adjusting memo re interest		
4. Head Office	367.00	
Labor		367.00
Head Office charges for labor taken up twice		
5. Freight on merchandise	625.50	
Head Office		625.50
Charge of 695, entered as 69.50		
6. Head Office	530.00	
Sale of truck		530.00
Adjusting memo put through in error.		

(b)

Head Office Books

ADJUSTING ENTRIES

Truck repairs	310.00	
Branch		310.00
Proportion of truck expense charged to Head Office		

(c) Inter-office balance per Head Office books 30/9/47		$134,520.00
Add Sale of truck erroneously credited to Branch		530.00
		$135,050.00
Less truck repairs		310.00
∴ Correct inter-office balance 30/9/47		$134,740.00

(d) Adjusted inter-office balance per (c) above		$134,740.00
Add adjustments per (a) above #4	367.00	
#6	530.00	897.00
		$135,637.00
Less adjustments per (a) above #1	90.00	
#2	30.00	
#3	50.00	
#5	625.50	795.50
Inter-office balance on Branch books before adjustment		$134,841.50

PROBLEM 3

Final Examination, November 1948

Accounting II, Question 1 (5 marks)

Name and describe four methods of distributing the indirect expenses of a production department to the goods produced in that department. State the circumstances in which each method could be used to advantage.

SOLUTION

(1) Percentage of direct-labour dollars — may be used to advantage where 1) labour hourly rates are fairly uniform; 2) all of the major products pass through all operations, provided relative times in each operation are similar for all products; 3) the department is set up to process only one class of finished products.

(2) Rate per hours of direct labour — may be used to advantage where 1) the work is manual, or principally manual, and tools and equipment costs are relatively minor; 2) machines do not vary widely in size or cost, and where the operators run only one machine; 3) and 4) same as 2) and 3) above.

(3) Rate per machine hour — may be used to advantage where 1) men run more than one machine; 2) the cost of equipment, or the cost of operating the equipment, varies widely between various product classes; 3) several men are required to operate one machine of certain types, or the number of men required per machine varies.

(4) Rate per unit of production may be used to advantage in process types of industries.

PROBLEM 4

Final Examination, November 1948

Accounting II, Question 2 (5 marks)

Describe two methods of accounting for by-products. State circumstances under which it might be desirable to use each method.

SOLUTION

(1) *Other Income Method.* Income from the sale of by-products is closed into Profit and Loss, and shown in the "Other income" section of the Profit and Loss Statement. No inventory of by-products is carried on the books. This method could be used in industries where

(a) the value of the by-product is unimportant

(b) the use of a more detailed method entails too much expense in comparison to benefits derived

(c) No clearly defined basis of separation appears and the carrying of the by-product with the main product does not entail any appreciable difference in the cost of the main product.

(2) *Total Cost less Revenue from Sale of By-Products.* The income from the sale of the by-product is treated as a deduction from the cost of the main product. This method is best used in industries where the by-products would, unless sold, be scrap, and thus any revenue from the sale of such scrap is a reduction in the cost of the main product.

(3) *Total cost less value of by-products including selling and administrative expense.* The proceeds from the sale of by-products are charged with the selling and administrative expense connected with the handling of the by-product; the net yield obtained is credited to the cost of the main product. This would be used in cases where the by-product, if no effort is made to sell it, would be wasted.

PROBLEM 5

Final Examination, November 1948

Accounting II, Question 3 (10 marks)

The following items appear in the budget of a manufacturing organization:

i. sales
ii. cost of direct material
iii. cost of direct labor
iv. cost of factory overhead
v. administrative expenses.

Required:

In respect of each of the above items state —

(a) the source of budget information,

(b) possible causes for variations between actual performance and budgeted expectancy,

(c) the extent to which the responsibility for such variations rests with the person who supplied the information for the budget.

SOLUTION

(i) Although the sales manager usually prepares the original budget estimate it may then be referred to the economist for general business conditions, to the market analyst for predictions concerning any changes in taste, style, population, etc., that may affect the future. If the volume is very different from the preceding year, the production department will be consulted regarding capacity and costs. In the end the sales figure may be set by the General Manager or the Board of Directors after all the factors have been considered.

The causes for variances are at least as numerous as the factors to be considered

in setting the budget for there is always the possibility of error. In addition to the considerations in the first paragraph there is the possibility of war, government restriction, labour unrest, etc., any one of which may cause wide variation.

The absence of an accurate crystal ball is usually a handicap but it cannot shift the responsibility for a budget error in sales from the senior executives that approved it. In fact, however, as soon as an error is discovered the responsibility is usually shifted down the ladder of responsibility as far as possible.

(ii) The budget figure for cost of direct materials will be obtained from the Plant Superintendent after he has determined the volume of production necessary to meet the estimated sales, and after consultation with the Purchase Agent as to prices.

Variations from budgeted expectancy may be caused by:

Changes in price level, for which the Plant Superintendent is responsible only to the extent that he should have foreseen the change.

Changes in purchases of units. If this is caused by variations in sales from expected sales, then the Sales Manager would bear the responsibility. If the change results from uneconomic buying or ordering, then the Purchase agent would be responsible.

Changes in the quality of units purchased. If this is a result of a change in policy as to the quality of the product, the responsibility falls on the general management. If this is a result of a poor forecasting of requirements necessitating purchases of qualities different from those planned, then the Purchase Agent would be responsible.

Change in scheduling of production. If this is a result of changed volume required for sales, then the Sales Manager is responsible. If this is a result of inaccurate planning of production to meet the expected sales, then the Plant Superintendent is responsible.

Change in production efficiency, which will be the responsibility of the plant superintendent.

(iii) The budget figure for the cost of direct labour will be obtained from the Plant Superintendent, after consultation with the Paymaster and personnel department. This figure will be arrived at through an analysis of the labour operations and time required for the budgeted production. Variations in cost of direct labour due to errors in budgeting (i.e. underestimating labour required, etc.) are the responsibility of the Plant Superintendent. He would not be responsible, however, for variations due to causes outside his control (strikes, general business conditions, executive change in policy towards labour, etc.) Change in productive efficiency may or may not be responsibility of Plant Superintendent, depending on circumstances. If because of supervision or methods used, it is his responsibility.

(iv) Cost of factory overhead will be estimated by the Plant Superintendent after he has arrived at the estimated production schedule, based on production to meet sales estimates.

He will be responsible for changes in fixed expenses that he should have foreseen, but did not, and also generally responsible for changes in efficiency and rates in a similar degree as he is in respect of material and labour.

(v) Administrative expenses will be estimated by the Comptroller, in consultation with the President or General Manager and the heads of other departments.

The Comptroller will be responsible for errors in forecasting and those variable expenses under his control to the extent that the variation does not arise as a result of the operations of other departments.

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THE DOMINION ASSOCIATION OF CHARTERED ACCOUNTANTS

10 ADELAIDE STREET EAST TORONTO 1, ONT.

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